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ABSTRACT

This eight-unit volume of the Michigan Speech Association curriculum guide is designed for use by instructors who teach a one semester course in radio, television, and/or film. It can also be used by those who teach a media unit within an English or speech class. The subject of the first unit is media analysis and evaluation. The second unit is an extensive presentation of the history and background of the three media. The next three units specify the equipment, physical plant, and materials required for studio and filming activities. The last three units are guides to radio, television, and film production. Each unit is organized in four categories: objectives, content, learning experiences, and bibliography. There are several appendices, dealing with definitions of terms, broadcast regulations and codes, explanations of radio and television visual signals, program preparation, sources of prepared programs, and running time for film footage. (RN)

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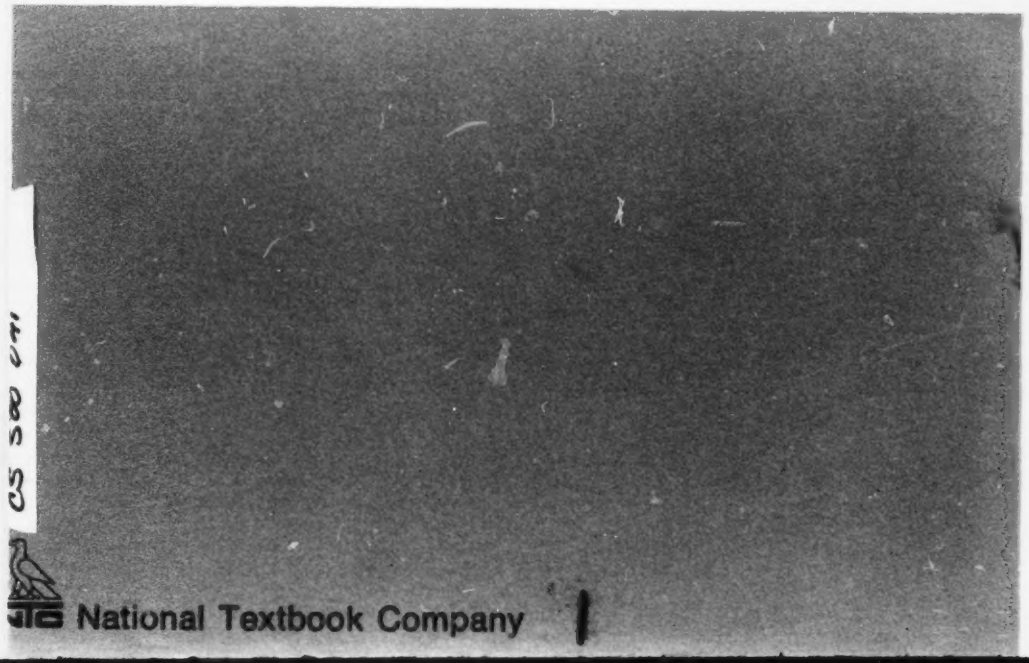
MSA CURRICULUM GUIDE

8

Radio, Television, and Film in the Secondary School



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Radio, Television, and Film in the Secondary School

THE MICHIGAN SPEECH ASSOCIATION
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INTRODUCTION

Exploding knowledge and constant change are the warp and woof of our society. The exponential rate at which knowledge increases forces specialization and teamwork in order for us to effect meaningful change. Teams of scientists develop new methods of combating disease. Teams of social scientists analyze urban stress. Research teams innovate educational methodology. Teams of specialists control space vehicles simultaneously from the ground and from space. Interaction, the fundamental tool of human development, is the keystone of our existence. Therefore, effective oral communication, the primary means of social interaction, becomes an indispensable tool for all men.

The security of a free society rests in the hands of youth. In our classrooms are the leaders of the 21st Century. Educators are charged with the responsibility of providing youth with the training ground that will enable them to mature physically, intellectually, emotionally, and socially into responsible adults capable of rational decision-making. Youth must cultivate and refine the ability to listen critically, to evaluate objectively, and to express ideas clearly, truthfully, and openly.

Oral communication is the process by which a speaker and a listener attempt to influence each other. It is the integrating factor in achieving productive interpersonal relationships; in the creative development and enjoyment of the arts; and in creative, rational decision-making. Oral communication is essential in achieving meaningful interrelationships between subject areas in team examination of the substantive ideas, ideals, and issues of our time to the end of nurturing adaptive and innovative decision-making.

The new Michigan Speech Association Curriculum Guide Series includes eight guides:

Speech Communication in the Elementary School
Speech Communication in the Junior High School
Speech Communication in the Senior High School
Debate in the Secondary School
Discussion in the Secondary School
Dramatic Arts in the Secondary School
Oral Interpretation in the Secondary School
Radio, Television, and Film in the Secondary School

This series is the product of a $5,200 project jointly funded by the Michigan Speech Association and the Michigan Education Association. Nearly 150 kindergarten through twelfth grade teachers and curriculum directors from metropolitan, suburban, and rural school systems throughout Michigan participated in the project either as reactors or revisers. A reactor completed an extensive questionnaire designed to determine to what extent the 1968 edition of a guide was useful in his particular teaching situation. A reviser taught from a guide for one semester, reviewed the data compiled from the questionnaire survey of that guide, and served as a member of one of the eight revising teams that prepared the new series.

The eight guides are designed for the beginning speech teacher; the teacher who is assigned responsibility for speech but lacks speech training; the teacher of specialized speech courses; and teachers of courses other than speech who wish to use oral communication as an integrative tool in their courses. Prospective teachers in undergraduate methods courses, libraries, curriculum directors, school administrators, and leaders of youth groups will find the guides useful.

Deldee M. Herman
Sharon A. Ratliffe

PREFACE

It was believed by those who constructed this Curriculum Guide that a need exists for a flexible outline to be used in an introductory high school radio-television-film course. This Guide has been so structured as to enable all teachers, especially the beginning teacher, to present a meaningful unit or series of units as the time allows. In order for it to meet the varied needs of the teachers and classes, the Guide includes some suggestions which would be of help to all teachers who are trying to utilize these media of communication—the teachers who have a full program in radio and/or television speech as well as those who teach the subject merely as a unit within a speech or an English class. Thus the units are designed to serve a dual purpose. A teacher may use either any one unit as a part of another course of study or the complete Guide, created as a continuum, for a course of study.

The equipment and facilities for broadcasting in each school plant are diverse as is the utilization of the course itself. It is with an awareness of this diversity that the committee has attempted to structure each unit so that it can be of value to schools with the minimum to maximum of equipment.

Radio, television, and film can best be taught through participation in related activities. Appreciation can be derived through the involvement of students, in simulated production groups, including writers, talent, and production staff, with a creative, imaginative teacher. In this way, the student is exposed to the equipment and the many roles of the medium. Therefore, this Guide provides basic information in specific areas, with learning experiences and bibliography for each.

Due to limited funds in most public schools and the scarcity of available frequencies from the FCC (Federal Communications Commission), the local commercial stations may serve as the only broadcast outlet available for student programming. Teachers are encouraged to take advantage of opportunities offered by these stations for additional experience and motivation for the students. School programs often serve to help the stations fulfill FCC regulations for public service obligations. The teacher is cautioned, however, to maintain a good image of educational broadcasts by not sacrificing quality. He should be certain that his students are quali-

fied, capable, and well-prepared. It is very important that the students learn to develop broadcast material of excellence which does not tolerate mediocrity, because it is their discrimination learned today that will affect the productions of programs to be seen and heard tomorrow.

Much of the groundwork for the 1968 edition of this guide was done several years ago by Ethel Tincher, Edward Stasheff, and Edgar Willis, who created the original Michigan Speech Association Curriculum Guide for high school radio and television published by the National Association of Educational Broadcasters in 1959. The new edition has been expanded to include a separate unit on film production as well as the incorporation of film in each unit.

Julia Cortright
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GENERAL OBJECTIVES

1. The student will develop an appreciation for broadcasting.
2. The student will understand the facilities, equipment, and materials necessary for broadcasting.
3. The student will understand the operation of the equipment through broadcast experience.
4. The student will understand, through the elements of broadcasting: better speaking, writing, listening, viewing, cooperative effort, and creativity.
5. The student will discover a new level of communication through the medium of film.
6. The student will critically examine, analyze, and discuss movies.
7. The student will synthesize habits of perception, analysis, judgment, and selectivity.

UNIT ONE: MEDIA ANALYSIS

Most of the students who will come in contact with the materials in this guide have grown up in a media-oriented world. Their values, their ideas, and much of their learning have been shaped by radio, TV, and film. This unit will suggest some areas and methods of evaluating the media with the purpose of getting students to think for themselves as to what effect the media have on their lives and to make constructive criticisms and judgments about the kinds of programs and films being presented constantly for their viewing and listening.

I. OBJECTIVES:

A. The student will demonstrate an awareness of the media's influence upon human behavior.
B. The student will demonstrate critical analysis of the media as art forms.
C. The student will demonstrate evaluation of the media as sources of information, news, and entertainment.

II. CONTENT:

A. Radio, television, and film affect human behavior:
   1. Radio and television broadcasting influence our values through:
      a. Advertising.
         (1) The buying habits of the public are affected as a result of advertisers' appeals to people.
         (2) Moral attitudes are influenced through deliberate sexual appeals built into the advertisements.
         (3) Humor is being implemented as an attention-getting device. (For example: Announcements and commercials in the manner of Stan Freeburg.)
      b. Programming.
         (1) Language patterns, both good and bad, are established among youngsters through examples exhibited on programs.
         (2) Habits, both good and bad, are determined

through examples set for the listener and viewer.

(3) Young adults play an impressive role in determining station policy and programming.

(4) News commentaries often determine public sentiment on political issues.

(5) Social, economic, and cultural facets of life are dramatized or revealed through both educational and commercial radio and television.

B. Film affects our values by:

1. Showing moral attitudes and social changes which reflect social concepts.
2. Dealing openly with topics which may be or may have been taboo through presentation and discussion in films.
3. An interrelationship which exists between film and TV—what is shown on one medium has an effect on what is shown on the other.

C. Radio, television, and film achieve great impact through:

1. Information as a social force.
   a. The newscasts are dramatically illustrated.
   b. P. S. A. are increasing as attempts to expand public awareness of personal and environmental problems.
   c. Special events and on-the-spot reports unfold history.
   d. Coverage of space explorations has been used as a means of educating the public.
   e. Coverage of the assassinations and funerals of President Kennedy, Martin Luther King, and Robert Kennedy conveyed the impact of these tragedies to the public.
2. Entertainment as a display of talent.
   a. Young performers become known through their exposure on radio, television, and film.
   b. The public sets standards for performance based on the quality of shows which they listen to and view.
   c. Performers on radio, television, and film are frequently emulated by youngsters and mimicked by large segments of the public.
3. Persuasion aimed at inducing mass social activity.
   a. Political campaigns are directed to large audiences.
   b. Recruitment of services and funds are carried out for

non-profit organizations.

c. Appeals to the emotions and imagination generate action because of the strong sense of personal involvement created by the media.

d. The media provide a means of escape through various types of programming or films which transport the viewer or listener away from his own problems.

D. Radio, television, and film have brought changes in our cultural standards through:

1. The standardization and simplification of the English language.
2. More universal dissemination of current events.
3. Greater exposure to music and drama.
4. Instant exposure to the problems and varying life styles of today's society.

E. Radio, television, and film as art forms:

1. Establish criteria for critical judgment of radio, television, and film as art forms.
   a. In radio programming:
      (1) What types of music are played?
      (2) What is the station's attitude toward news?
      (3) Do commercials fit the audience being played for?
      (4) How much variety is there in the programming?
   b. Television criteria might include:
      (1) How effective is the musical background for the kind of program being offered?
      (2) Is the program tastefully presented?
      (3) What kinds of effects are produced by the various camera angles, etc.?
      (4) If the program being presented is an adaptation of another literary form, how well done is it? Does it retain or enhance the original?
      (5) Are commercials in keeping with the rest of the program?
   c. Film as art:
      (1) Does the story portray life realistically?
      (2) If the film is meant to be fantasy, how effectively is the material presented?

(3) What special effects are used to create an artistic production?
(4) Does the film leave the viewer with the concept of a unified whole?
(5) How good is the camera work, use of color, musical score, etc.?

2. Discussion of radio, television, and film as art forms should include some judgments concerning the freedom to express the media artistically.
   a. Censorship
   b. Standards for an artistic performance.

F. The following is a suggested unit on critical listening and viewing of film, radio, and television.
1. Consider the purpose of the radio or television program or the film:
   a. Was the program worth being broadcast or filmed?
   b. What is the general purpose of the program or film?
      (1) To inspire?
      (2) To instruct?
      (3) To entertain?
      (4) To amuse?
      (5) To satisfy a need?
   c. Were there underlying motives in the presentation such as:
      (1) To sell a product?
      (2) To build goodwill?
      (3) To influence behavior?
      (4) To influence thinking?
   d. If so, how clearly were those motives established?
   e. Does the presentation fulfill its purpose?
   f. Specific questions for the critical evaluation of the art form should include:
      (1) How does the program enrich our lives?
      (2) In what way does the program help us to distinguish between good and evil?
      (3) Is it worthy of its representation as entertainment?
      (4) Has it increased our appreciation of an art form?

(5) Was the program new and fresh?
(6) Does the program distort or support our values?

g. If the presentation was a drama, how effectively were the following done?
(1) Were the characters stereotyped or full-dimensional and convincing?
(2) Was the theme clearly conveyed?
(3) Was the development of the story stimulating and original?
(4) How satisfying was the ending?

2. Critical evaluation of speeches, interviews, discussions, and reports by public figures can be based on:
a. The degree of objective communication.
b. The degree of evasion.
c. The degree of attempt to persuade the listener.
d. The degree of influence on individual, national, and international life.
e. The methods used to gain audience approval.
(1) Ethical appeals, effectiveness of personality, and reputation of the speaker.
(2) Logical appeals.
(3) Emotional appeals.
f. Whether our listening is active, marginal, or inattentive.
g. Whether the facts were presented clearly, accurately, realistically, impartially, in a well-balanced fashion.
h. Whether our listening is critical or "spongeminded".

3. News coverage must have significance whether presented through newscasting, news analysis, or commentary:
a. The listener or viewer should be able to analyze the objectivity of specific newscasters and commentary.
b. The listener or viewer should be able to analyze the editorializing by specific commentators.
c. When evaluating a newscast, one should be prepared to answer the following questions:
(1) Was the news well-balanced?
(2) Was the news presented objectively?
(3) Was the news presented with sincerity?

(4) Was anything of importance omitted?
(5) Did the announcer speak with a voice of authority?
(6) Was opinion labeled as opinion?
(7) Was the tempo easy to follow?
(8) Was there a change of pace?
(9) Were stories with emotional undertones read appropriately?
(10) Were there mistakes in pronunciation?
(11) Was the delivery clear and precise?
(12) Was the announcer the correct distance from the microphone? Did he handle the script well?
(13) Would the audience listen with interest?

4. Commercials should be analyzed to see if they serve "the public interest, convenience, and necessity".
   a. The listener or viewer should be able to evaluate specific commercial appeals by answering the following questions:
      (1) What does this commercial prove? What does it merely assert?
      (2) Does the commercial employ only appeals to emotions, such as fear, snobbery, emulation, or feelings of inferiority?
      (3) Does the commercial depend upon mere repetition to induce purchasing?
      (4) Does the commercial employ pseudoscientific terms which sound impressive, but mean nothing?
5. Overall station evaluation would reflect the following:
   a. Does the station provide a well-rounded program of entertainment?
   b. Does the station serve the public?
   c. Does the station contribute constructively to the community?
   d. Is the community represented?
   e. Does the station encourage discussion of controversial issues?
   f. Are the intellectual interests of the community being served?
6. An evaluation of radio, television. and film should include

some discussion of the media and the First Amendment. These questions might be considered:

a. Should there be government censorship of radio, television, and film?
b. To what extent should controls be exerted over radio, television, and film's "right to know"?
c. What effect could recent Supreme Court decisions have on the kind of programs presented on radio and television?
d. What dangers might be present as widespread use of television for other than entertainment purposes increases? (1948 concept)

III. LEARNING EXPERIENCES:

A. Analyze commercial stations within a given area so students can hear for themselves the various stages in which news can be delivered and formated and also determine their objectivity. Consider these six basic points for your analysis:
   1. Style of deliveries.
   2. Formats for newscast.
   3. Actualities—intros and outros plus number used in one newscast.
   4. Length of newscast.
   5. Subject matter concentrated on—local, state, national, international.
   6. Is the newscast subjective or objective? Explain why. Follow-up: Discuss these points so student will fully understand them. Then have student use them to write up his analysis of the station he has been assigned. Along with a written report, he will air check one newscast and bring in a taped segment to back up analysis.

B. Choose a radio station within your normal listening area and analyze it critically using these questions as your guide:
   1. What is radio's purpose?
   2. What is it doing now?
   3. What should radio be doing?

   To answer these questions you should use the following elements and expand their concepts so that the evaluation will be meaningful:
   1. Number of records.

2. Music (various kinds).
3. News (style, amount presented).
4. Community events.
5. Sports.
6. D. J. contribution.
7. Weather (how often, at consistent times).
8. Special programs (documentaries, editorials).
9. Ethnic programming.
10. Commercials (too many, clusters).

C. Comparative advertising analysis:
Stations to be analyzed must have similar formats. Each student will take two stations and do a comparative analysis. Base your comparison paper on the following points:
1. How many commercials in one hour?
2. How many commercials in a half hour?
3. How many commercials in every fifteen minute segment?
4. Were the commercials done one at a time?
5. Were the commercials done in clusters?
6. How long was each commercial?
7. If they were done in clusters, did the 60-second commercial come first followed by a 30-second, or vice versa?
8. Which station proved to be more effective in its presentation of commercials and why?

D. Collect a series of reviews of television productions and make a list of evaluations made by critics. Is there any common agreement among the reviewers as to what the criteria for a good show should be? (Television critics write for many newspapers such as *The New York Times* and magazines such as *The Saturday Review*.)

E. Make a list of types of television offerings. Choose several programs for each type telecast per week. Set up a discussion panel for each group. Panel members must view each of the programs listed under type and evaluate them. Using their evaluations, the panel members should be able to discuss the topic, "What is the best (type) program presently on television?"

F. Read such books or articles as *The Selling of the President* or *The Pentagon Papers* or other similar sources dealing

with television and its mass appeal. Write a criticism or summary of the book showing the issues involved as to freedom of the press and take a stand—pro or con—as to the media's right to present the controversial material.

Present a round table discussion on this same subject. Each member could prepare for the discussion by reading and reporting on one of the above types of books or articles or a television show dealing with one of these issues. The panel should draw some conclusions as to how much regulation there should be of the people's "right to know" and/or the effects of censorship and regulation of press or speech on the quality of life in a democracy.

G. Set up several discussion panels of from five to seven students each. These panels could be presented as television programs or radio programs if desired. Possible areas for discussion could be:

1. A symposium in which each student studies broadcasting in various countries and presents his findings. After his presentation, the panel and audience should discuss the values and weaknesses of commercial broadcasting in the United States as opposed to those found in other countries.
2. A symposium in which each member listens critically to one or two of the following types of programs:
   a. A talk by a politician.
   b. A panel discussion.
   c. An interview.
   d. A news commentary.

   Each panelist should listen for examples of the use of fact and opinion, rationalization, inferences, emotional language, voice inflection, and propaganda techniques. He then presents a summary of his findings and the panel and audience then discuss the implications of such materials and their effect on a listening and viewing audience.
3. A round table discussion on the topic, "To whom and at what level of intellect are the greatest number of commercials geared?"
   a. Preparation must be made by listening to and analyzing many types of commercials.

b. The chairman could ask questions similar to the following:
   (1) Should advertisers talk about competitors' products during commercials?
   (2) Are there too many commercials on the radio and television? How many are there in a given period and what is their average length?
   (3) Do some stations have louder commercials than other stations?
   (4) How do most commercials try to "sell" to children? women? men?
   (5) Are some commercials offensive?

4. A round table discussion on the topic, "To whom and to what level of intelligence are the greatest number of programs directed?"
   a. Preparation must be made by categorizing programs and then finding the purpose of each and how it goes about accomplishing that purpose.
   b. The chairman could ask questions similar to the following:
      (1) What is the major purpose of soap operas?
      (2) Which would you consider the better children's programs?
      (3) To what level of intellect are most programs geared?
      (4) Through continual watching of television, are children likely to develop an unrealistic attitude toward life, become more passive, be seriously influenced by the contents?
      (5) What do you consider the better programs on TV today? Why?

5. A round table discussion on the topic, "Should major broadcasting networks and stations in the United States be controlled by a few wealthy and influential individuals or groups or the government?"
   a. Preparation should be made by listing the major networks and stations in the United States, learning who owns them, becoming familiar with those organizations or individual owners, and also by read-

ing documents and articles dealing with government censorship.

b. Are there any examples of the seriousness of government censorship presently seen in other mass media?

c. Are there examples of the seriousness of individual or group control of networks or stations in the United States today?

H. As a semester project, assemble a notebook in which you have collected articles on film and reviews of such. Excellent sources would be *Time, Life, Saturday Review*. If you own the magazine, cut the review out; if not, xerox. Underline significant points. If you see the film, state where you agree or disagree with the review.

I. Review films.
   1. Minimum length: three pages.
   2. Format: An integrated discussion of:
      a. The facts of the film (producer, director, release date, actors, production company, etc.).
      b. The relevance of the film in movie history and/or its relevance for today.
      c. The story(s) and theme(s) of the film.
      d. The technique of the film (contributive and/or destructive).

J. General projects or questions.
   1. Define violence. Count all the violent incidents depicted on television throughout a day or week. What effect does this have on children?
   2. Should children be allowed to view any programs they wish? What do experts say about this?
   3. Should court trials be televised live?
   4. How have listening and viewing habits changed since the inception of radio and TV?
   5. Should Congressional and legislative sessions and hearings be broadcast?
   6. Should radio and television stations be required to devote a certain percentage of their broadcast time to programs such as symphonies, operas, lectures, and current plays? Why or why not?

7. In what way can you justify the statement that broadcasting can now be identified with American life itself?
8. If television is making us a nation of spectators rather than participants, how will this affect our way of life?
9. Which films have more influence on our values—those shown on TV or those shown in movie theatres?
10. How acceptable are the subjects shown on films in movie theatres for general TV viewing?

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UNIT TWO: HISTORY OF RADIO, TELEVISION AND FILM

Unit Two is a guide for the high school teacher who wishes to develop an appreciation and understanding of broadcasting as a communications medium, taking into account the functions of radio, television, and film in their historical setting. Since few schools operate radio or television stations or have the facilities for a film laboratory, many speech teachers utilize their classrooms to teach the appreciation of broadcasting and film including history, a knowledge of programming, and critical evaluation.

I. OBJECTIVES:

A. The student will demonstrate his understanding of the history of radio, television, and film.
B. The student will demonstrate his knowledge of the development of programming and film.

II. CONTENT:

A. Background and history of radio.
   1. Some of the nations participating in the development of broadcasting were:
      a. The United States.
      b. Denmark.
      c. Canada.
      d. Great Britain.
   2. Contributors to early broadcasting were:
      a. James C. Maxwell, British scientist, who drew up the theory of electro-magnetism. (1864)
      b. Thomas Edison, American scientist, who utilized electro-magnetism by providing wireless communication between railway stations and moving trains.
      c. Heinrich Hertz, German physicist, who showed that rapid variations in electric current could be projected into space in the form of radio waves, the theory upon which modern radio is based. (1887)
      d. Guglielmo Marconi, a 20-year-old Italian, who utilized Hertzian theory for wireless telegraphy. (1894)

e. John Ambrose Fleming, British scientist, who invented the vacuum tube. (1904)
f. It was refined by Reginald Fessenden, British, and Lee DeForest, American.
g. The vacuum tube made speech projection possible by radio. (1906)
h. DeForest demonstrated the importance of the vacuum tube by broadcasting recorded music from the top of the Eiffel Tower which could be heard 500 miles away. (1908)

3. Private enterprises struggling for the control of radio were:
   a. The British Marconi Company, which controlled all of Marconi's patents. (1897)
   b. American Marconi, Inc., which controlled most American wireless communication, the limited ship-to-shore (Congressional law, 1910) and special point-to-point broadcasts. (1899)
   c. American pioneers included in the struggle were:
      (1) General Electric.
      (2) Westinghouse.
      (3) Western Electric (AT&T).
   d. The Radio Corporation of America (RCA) bought out all patents and assets of American Marconi and, through cross-licensing agreements with other companies, took a commanding position in the American radio field. (1919)
4. Individuals and stations instrumental in bringing about the birth of modern broadcasting were:
   a. David Snarnoff (RCA) and Lee DeForest, who developed the modern concept of broadcasting for public consumption. (1916)
   b. WHA, The University of Wisconsin Physics Department, which broadcasted weather and market reports. (1917)
   c. William E. Scripps of *The Detroit News*, who began an experimental station, WWJ (1920). This first broadcast incorporated a transmission of the first

radio newscast complete with local, state, and congressional election returns and other news stories on August 31, 1920.

d. H.P. Davis and Dr. Frank Conrad, who opened the first commercially licensed radio station, KDKA, by broadcasting the returns of the Harding-Cox Presidential election. (1920)

5. The following are examples of early highlights of commercial broadcasting:
   a. A ten minute talk on WEAF (now NBC) was the first sponsored program. (August 28, 1922)
   b. Quality was improved considerably when stations had the financial means to pay for good talent.
   c. Secretary of Commerce, Herbert Hoover, led opposition to commercial radio.
   d. AT&T paved the way for sponsored broadcasting as we know it today. (April 18, 1924)
   e. Radio became "show business" with stars and programs such as:
      (1) Rudy Vallee, *Amos 'n Andy*, and *The Goldbergs*.
      (2) John McCormack, Lucrezia Bori, and other opera stars.
6. Large national networks established were:
   a. AT&T, American Telephone & Telegraph. (1923)
   b. NBC, National Broadcasting Company. (1926)
   c. CBS, Columbia Broadcasting System. (1927)
   d. MBS, Mutual Broadcasting System. (1934)
   e. ABC, American Broadcasting System, formerly the Blue Network. (1945)
7. Regulations established by the government to control broadcasting were:
   a. The Radio Act of 1912.
   b. The Radio Act of 1927.
   c. The Federal Radio Commission of December 18, 1929.
   d. The Communications Act of 1934 (The Federal Communications Commission).
   e. The FCC requirement of 1946 specifying public responsibilities of stations (The Blue Book).

f. Station identification geographically by means of call letters:
   (1) Call letters of stations east of the Mississippi River begin with the letter "W".
   (2) Stations west of the Mississippi River begin with the letter "K".

8. FCC broadcast regulations.
   a. In 1965 the commission provided for the public inspection of certain records of broadcast stations in the communities they serve, mainly duplicate copies of their records in the public files at the commission's Washington offices.
   b. Programming is left up to each individual station with the commission periodically reviewing the overall performance of a station, engineering and otherwise. The purpose, of course, is to see if they have lived up to their obligations and the promise they made in obtaining permission to use the public airwaves.
9. Broadcast obligations.
   a. In 1960 the commission issued a report and statement of policy in connection with its obligations of a station licensee. It said: "The major elements usually necessary to meet the public interests, needs, and desires of the community in which the station is located as developed by the industry and recognized by the commission, have included: (1) opportunity for local self-expression, (2) the development and use of local talent, (3) programs for children, (4) religious programs, (5) educational programs, (6) public affairs programs, (7) editorialization by licenses, (8) political broadcasts, (9) agricultural programs, (10) news programs, (11) weather and market reports, (12) sports programs, (13) service to minority groups, (14) entertainment programming.
10. Censorship and free speech.
   a. The Fairness Doctrine has evolved over some forty years as the guiding principle in assuring to the public an opportunity to hear contrasting views on con-

troversial issues of public importance.

b. In 1929 the Federal Radio Commission, predecessor to the FCC, introduced the Fairness Doctrine in relation to the objectives of broadcasting, namely, convenience, interest, or necessity. The FRC expressed the following: "Public interest requires ample play for the free and fair competition of opposing views and the commission believes that the principle applies to all discussions of issues of importance to the public."

c. In 1941 the Mayflower decision was made. This matter banned all editorializing, strengthening fairness.

d. In 1949 a report on editorializing was made known. The report stated broadcasters must give adequate coverage to public issues and coverage must be fair when reporting transpires and should accurately reflect opposing views.

e. In 1959 the FCC amended the Communications Act, which obligates broadcasters "to afford reasonable opportunity for the discussion of conflicting views of public importance".

11. Advertising obligations.
    a. In 1965 the commission adopted a policy which expects broadcast stations and producers of their advertising to cooperate in controlling the volume (loudness) of commercials.
    b. No more than 18 minutes of commercial matter may be presented within one hour.
12. Political broadcasts.
    a. The Communications Act provides all legally qualified candidates running for public office equal time on the air provided the licensee shall have no power of censorship over the material broadcast.
    b. However, no obligation is imposed upon any licensee to allow the use of its station by any such candidate.
    c. In 1959 the act was amended to exempt from the equal-time requirement appearances by candidates

on "bona-fide" newcasts, news interviews, and other news coverage.

13. Duplication of AM and FM programming.
    a. After October 15, 1965, licensees of FM stations in cities over 100,000 shall operate so as to devote no more than 50 percent of the average FM broadcast week to programs from an AM station owned by the same licensee in the same local area.
    b. Compliance with the non-duplication requirement must be indicated upon license renewal.
    c. All FM broadcast stations are licensed for an unlimited time operation. A minimum of 36 hours per week during the hours of 6 a.m. to midnight consisting of not less than 5 hours in any one day, except Sunday, must be devoted to the FM broadcast operation.
14. Educational broadcasts: AM educational stations.
    a. Educational institutions were among the pioneers in experimental broadcasting and held many early AM licenses.
    b. By 1925 there were 171 educational groups who held such licenses.
    c. However, due to competition from commercial broadcasting, most of these stations were off the air when the FCC was created.
    d. To further the development of non-commercial educational broadcasting, the commission in 1938 set aside certain AM channels between 41 and 42 megacycles for the exclusive use of educational institutions.
15. FM educational stations.
    a. Regular commercial FM broadcasting was authorized to start in 1941.
    b. In 1945 the commission reserved 20 FM channels between 88 and 92 megacycles for non-commercial educational FM stations.
    c. In 1948 the commission authorized low power (10 watt) operation on educational FM channels. (See Appendix D.)
16. The history of FM broadcasting.

a. Edwin H. Armstrong in the 1930's worked extensively on the development of FM broadcasting and is considered one of the first pioneers of frequency modulation broadcasting.
b. After extensive public hearings, the commission provided 35 channels for commercial FM and 5 channels for non-commercial educational FM use which were to start January 1, 1941.
c. The first commercial FM station licensed by the commission was WSM-FM Nashville (May 29, 1941) which operated until 1951.
d. At first, the FM band went from 42-40 megacycles; however because of skywave interference, the commission in 1945 moved FM to its present higher and less vulnerable position in the radio spectrum 88 to 108 megacycles, and at the same time increased the number of channels to 100. This provided 80 channels for commercial FM and 20 channels for non-commercial educational broadcast.

17. The advantages of the FM frequency.
a. FM has higher fidelity characteristics and is more free of static, fading, and background overlapping of other stations' programs.
b. FM's greater tonal range capability is due primarily to the fact that it uses a wider channel than that employed for AM broadcast.
c. The FM signal does not use the ionosphere; consequently, it is possible for many scattered FM stations to use the same frequency without interfering with one another.

18. The birth of stereophonic FM service.
a. In 1961 the commission adopted standards for FM stereophonic broadcasting.
b. On June 1, 1961, the rules laid down by the commission for stereo broadcasting became effective.
c. WGFM in Schenectady, New York, and WEFM in Chicago, were the first stations to experiment with stereo and also the first to begin regular broadcasting in stereo.

19. Home-made and manufactured receivers.
    a. Receiving sets operated by house current came on the market about 1928.
    b. In 1948 the development of the transistor came on the market and began replacing the tubes previously used in sets.
20. The responsibility of reviewing records lies with the licensee.
    a. In late 1970 and early in 1971, the commission began receiving a number of complaints concerning the lyrics of records played on broadcasting stations related to the use of language tending to promote or glorify the use of illegal drugs, such as marijuana, LSD, speed, etc.
    b. On Februrary 24, 1971, action was taken by the commission by issuing a Public Notice to all broadcast licensees.
    c. In short, the commission expects the broadcast industry to meet its responsibility of reviewing records before they are played on the air. And if such records promote the use of illegal drugs, the licensee will exercise appropriate judgment in determining whether the broadcasting of such records is in the public interest.

B. Background and history of television.
1. Innovations prior to the image orthicon were:
    a. The invention of the scanning disc by Paul Nepkow, German scientist. (1884)
    b. The patent of the iconoscope by Dr. V. K. Zworykin. (1923)
    c. The experimentations throughout the "Thirties" by DuMont, RCA, and CBS.
2. Television through 1948.
    a. Covered the New York World's Fair and an address by President Roosevelt. (1939)
    b. Consisted of a 441 line basis.
    c. Was authorized by the FCC for full commercial usage on the black and white 525 line basis. (1941)
        (1) There were only six stations on the air.

(2) There were only 4,700 sets in the New York area.

d. Was impaired seriously by World War II.

e. Was authorized by the FCC to utilize 13 channels on the VHF band. (1947)

(1) The number of station applications jumped from 75 to 300.

(2) Nearly one million sets were sold in 1948.

(3) Stations were located in 16 cities.

(4) Advertisers began buying time.

3. The television "freeze" of 1948-52.

a. Was due to signal interference.

b. Had a two-fold purpose.

(1) To develop a frequency allocation plan.

(2) To develop a policy for color TV.

c. Showed a lack of variety in programming.
Typical programs were:

(1) "Simulcasts" of radio, and wrestling, roller-skating, panel-quizzes, dog acts, etc.

(2) The first major television variety program was "The Milton Berle Show".

d. Brought about a loss of more than $48 million by the stations.

e. Caused significant changes in the concept of the medium.

(1) On April 14, 1952, the FCC allocated UHF channels 14 through 83.

(a) It was now possible to establish more than 2,000 stations.

(b) By July, 1952, there were 108 stations on the air in 63 cities.

(c) With the increase in the number of stations, networks provided national coverage.

f. Increased revenue made television more attractive to advertisers, talent, and the consumer.

4. Airborne television came about in 1961, when Midwest Program on Airborne Television Instruction (MPATI) was established.

5. Major factors in the growth of color television were:

a. FCC refused to accept its poor quality in 1940.
b. The CBS system was approved by the FCC in 1950.
c. A new set of rules for compatible color was issued by the FCC in 1953.
d. Color receivers were being manufactured by most companies in 1961.
e. The three major networks were producing color programs in 1962.
f. The development of color video-tape also greatly increased the circulation of color programs.

6. Congress passed a law in 1962 requiring manufacturers to equip all receivers with VHF and UHF channels.
7. The first earth satellite trans-Atlantic telecast transmission took place in 1962.
8. Technical developments which have improved the quality of the television picture and transmission of the signal are:
   a. The cathode ray tube in reproducing pictures in receivers.
   b. Larger screens for home receivers and for projection of closed circuit programs in theatres. (The latter is similar to the subscription method of television.)
   c. "Kinescope" films.
   d. Magnetic video-tape recorder.
   e. The perfecting of the image orthicon tube.
   f. The vidicon tube.
   g. The zoom lens.
   h. Transistorized receivers.
   i. Equipment for transmitting and receiving color.
   j. Mobile units.
   k. Methods of transmission.
      (1) Co-axial cable.
      (2) Micro-wave.
9. Community antenna television (CATV) has been expanded in recent years, both in the number of cable operations and in the facilities employed. An FCC ruling in 1970 required all CATV operations to have facilities for local program origination.

10. Utilizations of television are:
    a. Educational (ETV), presented via:
        (1) Educational networks or by large educational stations with programs geared for classroom supplement and home-viewing.
        (2) Commercial networks for home-viewing. (Films are often available for use in the school.)
        (3) Closed circuit in schools.
    b. Instructional (ITV), presented via:
        (1) Educational stations within a system for formal elementary, secondary, college, or university classroom teaching.
        (2) Closed circuit in schools.
    c. Closed circuit as used in:
        (1) Industry (counting, guarding, inspecting).
        (2) Sports ("Box office television").
        (3) Traffic control.
        (4) Military:
            (a) Instruction.
            (b) Surveillance.
        (5) Political fund raising.
        (6) Medical demonstrations.
    d. Subscription ("Pay-as-you-go" or "toll"):
        (1) Certain programs are made available only to those viewers willing to pay directly for them.
        (2) The signal is scrambled and the viewer must possess a decoding device.
    e. Space exploration ranges from photography of the moon, earth, solar system, and the universe via satellites to the development of cameras and transmission equipment.
    f. Instant replay through refinement of the video-tape recorder. Examples: sports, drama.
11. Recent FCC and governmental rulings which have had an effect on television broadcasting and programming are:
    a. The Public Broadcasting Act passed by Congress in 1967. This Act created a Corporation for Public Broadcasting which has the power to receive and

disburse funds for the production and distribution of educational programs.

b. The "Fairness Doctrine" was issued by the FCC in 1949.

(1) This document has encouraged an increasing number of stations to express their editorial views on the air.

(2) It also requires stations to make sure that a fair and equal presentation of all sides of controversial issues is made over their facilities.

(3) In 1967 the "Fairness Doctrine" was applied to commercials for the first time. This decision required stations which carried cigarette advertising to provide a significant amount of time for anti-smoking campaigns.
(Cigarette advertising was removed from broadcasting stations by Congress as of January, 1970.)

e. In an effort to promote diversity in programming, the FCC put the "prime-time rule" into effect in 1971. This regulation limits each network to three hours of programming during the prime evening hours.

d. In 1968 the Report of the National Advisory Commission on Civil Disorders recommended that the media expand coverage of minority communities and racial problems and integrate members of minority groups into all aspects of journalism and broadcasting.

C. Background and history of film.

1. Silent film (1900 to 1930).

a. Film pioneers:

(1) George Melies.

(a) Melies was a former magician interested in the "supernatural".

(b) The prime aim of Melies's early films was to mystify. Some early films were: *The Vanishing Lady, The Haunted Castle, The Laboratory of Mephistopheles, The Bewitched Inn.*

(c) By 1902 Melies showed people disappearing, cut in half, flying through the air, etc. These feats were achieved by camera effects only he knew: double exposures, masks, stop motion, reverse shots, fast and slow motion, animation, fades, and dissolves.

(d) From single pictures, Melies progressed to movies of many scenes, which he called "artificially arranged scenes". These sometimes contained as many as thirty scenes lasting eight to twelve minutes. *Cinderella, Joan of Arc, A Trip to the Moon, Gulliver's Travels, The Impossible Voyage* were full of theatrical tableaux, lavish costuming, spectacular settings, and elaborate camera effects.

(2) Edwin S. Porter.

(a) Porter broke down the scenes into smaller component shots.

(b) Because he used many shots to create a scene, the process of combining and arranging them was needed; thus editing was born. Porter's first dramatic films using the new editing technique were: *The Life of an American Fireman* and *The Great Train Robbery*. They initiated a vigorous style of movement and melodrama that captivated the American people.

(c) Porter extended the editing technique from a straightforward application to one of comparison. In *The Ex-Convict*, he compared an ex-convict to a millionaire. In *The Kleptomaniac*, he compared the treatment under the law of two people caught shoplifting, one rich, one poor.

(3) David Wark Griffith.

(a) By the time Griffith entered the movie mak-

ing business, the story film was the most important film produced.

(b) Griffith was the first to change the camera position during a scene to get it closer to the actors, thus establishing the medium and close shot.

(c) To increase the camera's psychological capacity, Griffith used such things as tilting, panning, using soft focus or dollying the camera.

(d) He was the first to control the screen time of a shot for dramatic effect.

(e) He freed the movie from its dependence on a chronological development through use of the "switch-back" (flash-back).

(f) Two of his greatest works were *The Birth of a Nation* and *Intolerance*. *The Birth of a Nation* was twelve reels, two hours in length. *Intolerance* was thirteen reels long, a true feature length film.

(g) Griffith altered the conventional screen shape to achieve a dramatic effect by use of blacked-out sections, an iris or a mask, or some unusual lighting effect.

(4) Erich von Stroheim.

(a) Stroheim was trained in Hollywood and was America's first motion picture realist. His pictures were so realistic that they looked like newsreel film. He felt it was possible to tell a great story in film so that the audience would believe that what they saw was real.

(b) Stroheim's most famous picture, *Greed*, was forty-two reels long and lasted eight hours; but it was shortened.

(5) Robert Wiene.

(a) Wiene was the first to use motion pictures as a form of expressionism.

(b) In *The Cabinet of Dr. Caligari*, Wiene pre-

sented a new kind of fantasy, a fantasy of the mind. Only in the final scene did he tell the audience that what they saw happened only in the mind of an insane person.

(6) E.A. Dupont.
   (a) In *Variety*, Dupont moved the camera like a piercing eye that could see inside the characters.
   (b) He lifted the camera from a passive role of an observer to an active one of participant. Dupont actually swung the camera from a trapeze to get a dramatic effect.

(7) Fred Murnau.
   (a) Murnau used many of the same techniques as Dupont at the same period of time.
   (b) In *Sunrise*, Murnau told the whole story by a camera that roved everywhere.

(8) Carl Dryer.
   (a) Dryer made one of the most unique films in motion picture history, *The Passion of Joan of Arc*.
   (b) The film told the story of the passion of Joan entirely from her point of view.
   (c) Extreme close-ups were used almost exclusively.

(9) Sergei Eisenstein.
   (a) Eisenstein made three film classics, *Potemkin*, *Ten Days That Shook the World*, and *The Old and New*.
   (b) In these films he displayed genius by having shots that were related to each other to accomplish a series of high dramatic effects on the audience.

(10) V.I. Pudovkin.
   (a) Pudovkin's most compelling structural device was his use of cross-cutting.
   (b) The two films of Pudovkin that were most famous in the United States were *The End*

of St. Petersburg and *Storm Over Asia.*

2. Early sound motion picture directors.
   a. With the advent of sound, motion pictures lost all of the sophistication they had gained through the silent era and reverted to their primitive beginning.
   b. Rene Clair.
      (1) Clair made his pictures more unreal so that the poor sound would seem more real.
      (2) The result of Clair's work was a series of satires and social comedies:
         (a) *Under the Roofs of Paris.*
         (b) *Le Million.*
         (c) *July the Fourteenth.*
         (d) *The Last Millionaire.*
   c. Walt Disney.
      (1) The advent of sound allowed Disney to become one of the first great film animators.
      (2) Disney used many unreal sounds to reinforce the images in many of his fantasies.
      (3) The Disney studio developed many new techniques in the use of sound in the early years that became standard procedures in years to come.
   d. John Ford.
      (1) Ford was a director of silent film who made the adjustment to sound and combined with good writers to produce one of the first sound film classics.
      (2) *The Informer* showed Hollywood that many of the things learned in the silent days could be used very effectively in sound motion pictures.
   e. Orson Welles.
      (1) Because of his radio background, Welles had no difficulty adjusting to the sound aspect of film making.
      (2) *Citizen Kane* electrified the motion picture world.
         (a) It was almost devoid of close-ups; instead Welles used an extra wide angle lens.
         (b) He also disregarded many Hollywood con-

ventions: he shot from the floor, focused into spot lights, and framed his actors in new ways to achieve different dramatic effects.

(c) Welles was one of the first directors to use an off scene sound for some of his characters.

3. Motion pictures during World War II.
   a. The primary function of film in most of the world from 1941 to 1945 was propaganda.
   b. In Hollywood, the best films were the *Why We Fight* series.
4. Post-war years.
   a. In these years, there was a group of important film makers in Italy.
      (1) These Italians established the neo-realistic film movement, which was not the least bit romantic, although it had some idealism.
      (2) Some of these directors were Roberto Rossellini (*Open City*), Vittorio DeSica (*Bicycle Thief*), Giuseppi de Santis (*Tragic Hunt*), Frederico Fellini (*La Strada*).
   b. Akira Kurosawa.
      (1) Kurosawa used violent camera movements in *Rashomon* to set a sort of rhythm throughout the film.
      (2) In *Rashomon*, the director frequently panned the camera from characters to the sky, rain, etc., to intensify the emotion of the scene.
   c. Ingmar Bergman.
      (1) Bergman said his purpose in making films was "to express in an entirely subjective manner, the ideas that are part of man's conscience".
      (2) Bergman used the protagonist's mind as the stage upon which all action centered.
      (3) There is great stress upon close-ups of the human face in many of Bergman's films.
      (4) Some of his early films were *Naked Night*,

Smiles of a Summer Night, The Seventh Seal, and *Wild Strawberries.*

5. Contemporary developments in film.
   a. The new philosophy of youth seems to be, "It's just as easy to go to a movie and let it all wash over you".
   b. There seems to be a shift off the writer of film stories onto the film maker.
   c. There also seems to be a shift to the low budget film shot on location.

III. LEARNING EXPERIENCES:

A. Divide the class into teams of two. Ask each team to write a very short radio presentation of: (1) an historical incident, (2) a situation related to a significant period in the life of a noted contributor at the time he developed something for radio or television.
   1. The script should be no longer than 2 to 3 minutes.
   2. Sound effects and music should be used if possible.
   3. The presentation should be put on audio-tape so that the class may evaluate it by listening to it. (This is a good listening exercise for the class.)

B. Ask the class to present a news program announcing certain happenings of a particular year, such as 1924. The news can be of social, political, or governmental events. Significant radio and television events of that year should, however, be incorporated in the news.

C. Set up several discussion panels of from five to seven students each. The panels can be presented as television programs or radio programs.
   1. Symposium I. (Each panel should prepare a symposium.)
      a. Each student should present a short research paper on broadcasting in different countries, i.e., England, France, Russia, the United States, etc.
      b. After the presentations, the panel and audience should discuss the values and weaknesses of commercial broadcasting in the U.S. as opposed to those found in other countries.

2. Symposium II.
   a. Each panel member should listen critically to one or two of the following types of programs:
      (1) A talk by a politician.
      (2) A panel discussion.
      (3) An interview.
      (4) A news commentary.
   b. Each panelist should listen for examples of the following:
      (1) Fact and opinion.
      (2) Rationalization.
      (3) Inferences:
         (a) Inductive reasoning.
         (b) Deductive reasoning.
      (4) Emotional language and voice inflection.
      (5) Propaganda techniques:
         (a) Name calling.
         (b) Band wagon.
         (c) Myth.
         (d) Testimonial.
         (e) Transfer.
         (f) Plain folks.
         (g) Glittering generalities.
         (h) Card stacking.
   c. Each panel member must present a short talk on the use of the inferences and propaganda techniques used in the programs analyzed. The panel and audience then should discuss the implications of such usage.
3. Round Table Discussion I.

   "To whom and at what level of intellect are the greatest number of commercials geared?"
   a. Preparation must be made by listening to and analyzing many types of commercials.
   b. The chairman could ask questions similar to the following:
      (1) Should advertisers talk about competitors' products during commercials?
      (2) Are there too many commercials on radio and

television? How many are there in a given period and what is their average length?

(3) Do some stations have louder commercials than other stations?

(4) How do most commercials try to "sell" to children? women? men?

(5) Are some commercials offensive?

4. Round Table Discussion II.

"To whom and to what level of intelligence are the greatest number of programs directed?"

a. Preparation must be made by first, categorizing programs and second, finding the purpose of each and how they go about accomplishing that purpose.

b. The chairman could ask questions similar to the following:

(1) What is the major purpose of "Soap Box Operas"?

(2) Which would you consider the "better" children's programs?

(3) To what level of intellect are most programs geared?

(4) Through continual watching of television, are children likely to develop an unrealistic attitude toward life, become more passive, be seriously influenced by the contents?

(5) What do you consider the better programs on TV today? Why?

(6) To whom are most radio programs geared?

(7) Do some radio stations lean toward a full schedule of certain types of programs? If so, what are the most frequent types of programs broadcast?

5. Round Table Discussion III.

"Should major broadcasting networks and stations in the United States be controlled by a few wealthy and influential individuals or groups?"

a. Preparation must be made by listing the major networks and stations in the United States, learning who owns them, and becoming familiar with those or-

ganizational or individual owners. (See *Broadcasting Yearbook*.)

b. Possible questions for the chairman to ask of the panel, after he has drawn from them the factual material they have gathered, are:
   (1) What are the dangers to the United States security if such a control exists?
   (2) Can the FCC do anything about such a monopoly?
   (3) Are there any examples of the seriousness of such a situation presently seen in other mass media?
   (4) Are there examples of the seriousness of individual or group control of networks or stations in the United States today?

6. View the following films:
   a. *The Great Train Robbery* (Silent).
   b. *Stage Coach*
   c. *High Noon*.

   Hold a class discussion comparing these to modern Westerns such as *Butch Cassidy and The Sundance Kid.*
7. View *All Quiet on the Western Front*.
   Hold a class discussion comparing this film with *Mash* or *Patton* and other modern films on war.
8. View *The Birth of a Nation*.
   Use as a basis for a discussion of stereotyping and propaganda as related to the film medium.

D. General questions or projects:
1. Obtain a copy of Part III of the FCC Rules and Regulations. Study the various aspects.
2. Examine the speech, radio speech, broadcasting, and television books in the school library and prepare a bibliography for future reference.
3. Talk with someone familiar with non-commercial broadcasting in a foreign country. What are the advantages and disadvantages as compared to American practices?
4. What are the current advertising costs on radio and television?
5. Keep a log of the movies you attend and see on tele-

vision. Compare older films seen on television with current films. Distinguish between films produced for the screen and those produced for television.

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UNIT THREE: EQUIPMENT

Very few school studios begin as full-fledged audio facilities. A simple amplifier unit, with a crystal microphone and a small speaker, is a beginning. Later on, a tape recorder, a turntable, a mixer, and additional microphones can be added over a period of time. Utilizing efficiently and properly what equipment is on hand is the best way of demonstrating the need for better equipment. Administrators are not adverse to providing funds for good equipment if they are reasonably certain that it will be profitably used.

Students can help greatly when it comes to equipment. The teacher should not hesitate to seek out capable boys who may already own amateur licenses or have local reputations as electronics "experts". Many high schoolers can capably design, build, install, and maintain sophisticated gear. The students could conceivably turn out to be the most splendid resource of all.

I. OBJECTIVE:

A. The student will identify and operate basic broadcast film equipment.

II. CONTENT:

A. Some equipment can be utilized within a regular classroom:
   1. *Tape recorders* (audio and video) can be utilized for many useful classroom activities:
      a. Recording and playing back:
         (1) Drama.
         (2) Speeches.
         (3) Readings.
         (4) Interviews.
         (5) Discussions.
         (6) Artistic performances.
      b. Producing and editing special projects, such as:
         (1) Sportscasts.
         (2) Sound tracks for movies.
         (3) Music and sound for school plays.
         (4) Music sequences for water shows, modern-dance programs, and assemblies.

(5) Announcements for school, PTA, ball games, school carnivals.

c. Teaching the fundamentals of operation, care, and maintenance of tape recorders, including:
(1) Speeds.
(2) Tracks.
(3) Splicing and editing.
(4) Stereo.
(5) Specifications.
(6) Services and models.

2. *Microphones* and *amplifiers* can be utilized for:
a. Study of microphone techniques.
b. Study of microphones and their various functions and characteristics.
c. Study of amplifiers and their functions.

3. *Turntables* can be employed to teach audio practices and techniques, including:
a. Music programming.
b. Themes.
c. Background music (mood, pace).
d. Music mixing (segues, fades).
e. Special effects.
f. Special problems:
(1) Sources of records (record companies).
(2) Licensing agencies (ASCAP, BMI).
(3) Copyrighted music.

4. *Speakers* have many different uses according to:
a. Size.
b. Specifications.
c. Functions:
(1) Public address.
(2) Monitoring.
(3) Hi-fi and stereo.
(4) Outdoor.
(5) Underwater.
(6) Paging.
(7) Special purposes:
(a) Earphones.
(b) Cueing.

5. *TV cameras* can be used in the classroom for:
   a. Studying camera technique and operation.
   b. Critical self-viewing.
   c. Practicing for programs and performances.
   d. Studying functions of lenses.
   e. Tripod study.
6. Certain *TV materials* can be studied, such as:
   a. Visuals.
   b. Graphics.
   c. Masks and gobos.
   d. Special effect material:
      (1) Animation techniques.
      (2) Spirals.
      (3) Wipes.
      (4) Pulls and flips.

B. Actual broadcasting would require additional equipment:
1. The *transmitter* causes the signal to radiate and determines:
   a. Power.
   b. Primary and secondary listening radii.
   c. Radio waves:
      (1) Ground wave.
      (2) Sky wave.
      (3) Line-of-sight.
   d. Frequency: (AM, FM, TV)
2. The *tower* effects signal coverage by its:
   a. Height.
   b. Location.
3. The *transmitting antenna* distributes the signal in a pattern according to:
   a. Type of license:
      (1) Directional.
      (2) Non-directional.
   b. Power.
   c. Vertical-horizontal needs.
4. The *transmission line* connects the transmitter to the antenna and varies according to:
   a. Size.
   b. Length.

c. Construction.

5. The *patch system* connects various areas and components of the broadcast system for program purposes, including:
   a. The turntables.
   b. The tape recorders.
   c. The microphones.
   d. The telephone.
   e. The remote stations.
   f. The studios.
   g. Monitor tuners and speakers.
   h. Intercom stations.
   i. Building PA inputs and outputs.
   j. Auditioning and test equipment.
6. Control room *furniture* should include:
   a. Desks.
      (1) Console.
      (2) For writing and typing.
      (3) For holding tape recorders, telephone, daily record and tape cabinet, and messages.
   b. Cabinets to contain:
      (1) Tapes.
      (2) Records.
      (3) Tools.
      (4) Supplies: splicing tape and cutter, tabs, record wipers and cleaners, pencils, and paper.
   c. Chairs for:
      (1) Operator (swivel w/wheels).
      (2) Announcers.
      (3) Visitors.
   d. Files to hold:
      (1) Equipment catalogs.
      (2) Blank and completed logs (programs, transmitter, maintenance, music).
      (3) Correspondence (in and out).
      (4) Stationery.
      (5) Program sources.
      (6) Personnel files.
      (7) FCC advisories.

(8) Mailing lists.
(9) Engineer information.
(10) Miscellaneous data.

e. Shelves for:
(1) Books.
(2) Tools.
(3) Repair work.
(4) Storage of gear (microphones, headsets, cable, test equipment).

7. The *remote equipment* should include:
a. Remote amplifier.
b. Microphone.
c. Microphone cables and connectors.
d. Headset.
e. Extension cord.
f. Carrying case.

8. Certain *electronic gear* is useful around a broadcast station, including:
a. Volt-ohm (VOM) meter.
b. Oscilloscope.
c. Tools:
(1) Diagonal cutters.
(2) Long-nose pliers.
(3) Solder gun.
(4) Electric drill.
(5) Chassis punch.
(6) Hammer.
(7) Nut-driver set.
(8) Small end-wrench set.
(9) Small Allen-wrench set.
(10) Tube tester.
(11) Flashlight.
(12) Trouble light.
(13) Chassis mirror.
(14) Electric motor oil.
(15) Tape head cleaner.
(16) Carbon tetrachloride.
(17) Scissors.

C. Equipment must be maintained:
   1. Professional equipment costs more to buy and less to maintain.
   2. Students should learn preventive maintenance and care of equipment.
   3. Students should be taught proper operational procedures.
   4. With supervision, some students can service and repair equipment.
   5. A capable student is able actually to design and build electronic gear:
      a. Power supplies.
      b. Intercoms.
      c. Simple amplifiers.
      d. Warning light systems.
      e. Switching systems.
      f. Speaker extensions.
      g. Impedance matching and filtering equipment.
      h. Microphone mixers.
   6. Broadcast equipment must conform to FCC specifications. (See FCC *Rules and Regulations*, Volume III.)

D. Film equipment:
   1. Camera (8mm., Super-8, 16mm.).
   2. Tripod.
   3. Light meter.
   4. Stop watch.
   5. 100 ft. measuring tape.
   6. Splicer (tape, wet, hot).
   7. Editor (8mm., Super-8, 16mm.).
   8. Two rewinds.
   9. Editray.
   10. Animation stand.
   11. Film cleaning equipment.
   12. Film storage racks.
   13. Spot lights and stands (for indoor shooting, animation, titling).
   14. Extension cords.
   15. Projection.
   16. Some optional equipment for 16mm. production:

a. 400 ft. reels (for camera).
b. Electric motor (for camera).
c. Batteries (dry-cell).

III. LEARNING EXPERIENCES:

A. Design equipment layout for a broadcast station using catalog references for specifications and costs.
B. Have some students with electronic backgrounds explain the importance of specifications in broadcast equipment (audio and video).
C. Visit a commercial radio station, an amateur station, an audio shop, a citizens' band facility, or a police radio room and observe the types of equipment.
D. Demonstrate and discuss techniques of operating tape recorders, turntables, and mixers, taking care of records and tapes, winding microphone cables, and handling film equipment.
E. Discuss FCC rules regarding maintenance of transmitter and keeping of transmitter logs.
F. Look up frequency and power tolerances for broadcasting.
G. Find out how a station acquires its allocated power and frequency.
H. Find out brand names of various electronic components (consoles, microphones, speakers, transmitters, antennae, turntables, tape recorders, wires and cables, connectors, tone arms and cartridges, headsets, tuners, emergency broadcast gear, remote amplifiers, film equipment).
I. Design and build some electronic gear; demonstrate it in class.

IV. BIBLIOGRAPHY:

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Lawton, Sherman. *The Modern Broadcaster*. New York: Harper

and Brothers, 1961.

V. TRADE CATALOGS:

Allied Radio Corporation, 100 North Western Avenue, Chicago, Illinois.

Audio Distributors, Inc., 2343 South Division Avenue, Grand Rapids, Michigan.

Heathkit Company, Benton Harbor, Michigan.

UNIT FOUR: PHYSICAL PLANT

A speech teacher with no special facilities at his disposal may, with a little ingenuity and improvisation, convert a classroom into a studio and control room. In addition, a teacher in this situation can work with the local commercial stations, which often welcome school-oriented programs, if for no other reason than to fill public-service time or to help reinforce their teen audiences. But the teacher genuinely interested in broadcasting can do even more. He can watch developments in his school system; he can inquire occasionally about the possibilities of future facilities; he can be on hand when additions to the school plant are being discussed; he can in many ways keep his administration aware of the importance of radio and television in secondary education. Superintendents often wait until a teacher walks in and says, "You know, I'd like to get some radio and television going around here. I've got an idea for using that storage room at the end of the corridor . . ."

I. OBJECTIVES:

A. Students will understand broadcasting and film making facilities as used professionally and as a classroom-centered experience.

II. CONTENT:

A. The teacher having a classroom with no studio may still teach broadcasting by:
   1. Providing two areas in the classroom, one for listening and viewing and the other for production.
   2. If the teacher wishes to create a more realistic listening situation, she may divide the two areas by means of a screen, a temporary partition, or a drape.

B. A teacher having a limited budget may provide a more realistic broadcasting facility by installing:
   1. A permanent partition with a door and a large rectangular window.
   2. Inexpensive carpeting.
   3. Accoustical ceiling tile.
   4. Inexpensive material such as drapery on the walls.

5. An "On the Air" light.

C. If the teacher is fortunate enough to have access to a spacious and complete facility designated for radio and/or television, the following items should be considered:
   1. Visual access for a faculty advisor.
   2. Accoustical problems:
      a. Studio and control room windows should be double-glassed and non-parallel.
      b. Heat and vent ducts should be sound-treated and built non-parallel to opposite walls.
      c. Doors should be sound-proofed or hung doubly.
      d. Studio walls should be accoustically treated and built non-parallel to opposite walls.
      e. Studio ceilings should be covered with accoustical plaster, carpeting, or tile.
      f. Floors should be carpeted.
      g. The studio should be located away from noisy areas, such as a busy street, shop area, garage, gym, and music department.
   3. Adequate ventilation and/or air conditioning.
   4. Additional area for records, tapes, books, equipment, visuals, maintenance, conferences, clerical work, audition, and rehearsal.
   5. Possible locations for the transmitter, tower and antenna, and transmission line and added space in the control room for equipment, if future broadcasting beyond the confines of the school is a possibility.
   6. High ceilings for mounting of lights for television.

D. Film.
   1. Darkroom.
   2. Classroom.

III. LEARNING EXPERIENCES:

A. Visit broadcasting stations in the community and observe the designs and layouts in terms of their function.

B. Plan and design a school broadcast facility on a minimal and optimal basis.

C. Discuss the problem of acoustics in school, home, business

industry, and broadcast station facilities.

D. Discuss the differences in broadcasting facilities in terms of educational and professional requirements.

E. Explain the importance of auxiliary facilities, such as storage areas, workshops, libraries (record, film, tape), and visual rooms.

F. Be prepared to answer the following:
   1. How much would it cost to build a radio or TV station?
   2. Should the school be expected to prepare students for commercial television and radio?
   3. What are recent developments in radio and television facilities?
   4. What are some of the differences between educational and commercial radio-television broadcasting stations?
   5. Where can funds be acquired to build a school broadcasting station?

IV. BIBLIOGRAPHY:

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Head, Sydney W. *Broadcasting in America.* Bbston: Houghton-Mifflin Company 1956.

Willis, Edgar E. *A Radio Director's Manual.* Ann Arbor: Ann Arbor Publishers, 1961.

UNIT FIVE: MATERIALS

In this unit, radio, television, and film are treated separately; but it should be kept in mind that the three media have common concerns, especially in the speaking, writing, and audio aspects. It is possible to teach radio, television, or film in practically any environment. The important consideration is the teacher's depth of interest and creativity.

I. OBJECTIVES:

A. The students will become familiar with the materials used in broadcasting and film making.

II. CONTENT:

A. Radio is an up-to-date dynamic subject in all its aspects, including the various materials used in broadcasting.
   1. Many broadcast materials can be studied in a non-broadcast situation, such as:
      a. Continuity copy.
      b. Dramatic scripts.
      c. News copy.
      d. Public service announcements.
      e. Program promotions.
      f. Station promotions.
      g. Station identifications.
      h. Records and tape recordings.
      i. Documentary scripts.
      j. Book reviews.
      k. Literature of the industry.
      l. Instructional scripts.
   2. On-the-air materials should include:
      a. Program logs.
      b. Transmitter logs.
      c. Program schedules.
      d. Continuity books.
      e. Tape and record files.
      f. Tape cartridge and record library.
      g. Station manual.

h. Office filing system.
i. FCC forms.
j. License information.

B. Production materials for television include:
1. Visuals.
2. Slides.
3. Film clips.
4. Animations.
5. Special effects.
6. Felt boards.
7. Roller stand.
8. Turn-around.
9. Flip stand.
10. Chalk board.
11. Visual board.
12. Tapes (video).
13. Rear screen projector.

C. Production materials for film making include:
1. Film (8mm.; Super-8; 16mm.).
2. Titles (¾"; ⅜"; 1¼").
3. Masks (camera).
4. Film reels (100 ft.; 200 ft.; 400 ft.).
5. Filters.
6. Leader.
7. Splicing tape or film cement.

III. LEARNING EXPERIENCES:

A. Radio.
1. Prepare a five-minute news program.
2. Write some program promotions for some local radio programs.
3. Adapt a dramatic script from a short story.
4. Obtain some wire-service news copy from a newspaper or a local radio station.
5. Write an original dramatic script.
6. Design a daily program schedule.
7. Prepare an audition tape.
8. Design a system for filing records and tapes.

9. Obtain and fill out an FCC form. (340)
10. Set up a continuity day-book.
11. Write four commercials of 10, 20, 30, and 60 seconds, all on the same subject or product.
12. Study for and take the Third Class Operator's License Examination.
13. Design a station manual, including:
    a. Station objectives.
    b. Description of staff positions:
        (1) Station manager.
        (2) Program director.
        (3) Consulting engineer (or chief engineer).
        (4) Announcers (staff, sports, special events).
        (5) Engineers (production, maintenance).
        (6) Traffic chief.
        (7) Promotions chief.
        (8) Librarians (tapes, records, miscellaneous).
        (9) Production chief.
        (10) Music director.
        (11) News director.
        (12) Faculty advisor.
14. Set up a weather reporting station.
15. Devise a self-service library for on-the-air work.

B. Television.
1. Plan and write a five-minute television script, including:
    a. News—three minutes.
    b. Commercial, with product—45 seconds.
    c. Weather report—one minute.
    d. Public service announcement—10 seconds.
    e. Station identification—five seconds.
2. Write a program promotion for a well-known television program.
3. Write a five-minute television drama, using standard script form.
4. Prepare a superimposition.
5. Demonstrate the use of masks and gobos.
6. Report on the processing and function of 35mm. slides for television.

7. Explain the problems of the "gray scale".
8. Explain "aspect ratio".
9. Build models of various types of equipment for displaying visuals, including:
   a. Flip stand.
   b. Roller stand.
   c. Drum.
   d. Easel.
   e. Felt or chalk board.
10. From record company catalogs, compile a list of sound records.
11. Make a set of time cards.
12. Build and demonstrate a simple animation device.

C. Film.
1. Build a model of a typical motion picture camera's shutter, showing how it works.
2. Do some simple animation procedures.
3. Make a few masks for the camera that is being used and demonstrate how they work.
4. Do some "trick photography" using stop action, fast action, etc.
5. Demonstrate the use of various camera filters.
6. Demonstrate how to title film.
7. Build a film editor for the film being used.

D. Explain the importance of auxiliary facilities, such as storage areas, workshops, libraries (record, film, tape), and visual rooms.

E. Be prepared to answer the following:
1. How much would it cost to build a radio or TV station?
2. Should the school be expected to prepare students for commercial television and radio?
3. What are recent developments in radio and television facilities?
4. What are some of the differences between educational and commercial radio-television broadcasting stations?
5. Where can funds be acquired to build a school broadcasting station?

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Willis, Edgar E. *A Radio Director's Manual.* Ann Arbor: Ann Arbor Publishers, 1961.

UNIT SIX: RADIO PRODUCTION

While the basic techniques of radio production tend to remain about the same through the years, radio's changing environment has dictated a drastic change in operational format. American radio, while in its prime, was characterized by great dramatic productions, the big bands, the news personalities, the variety shows, and individual stars. In those days, the radio director enjoyed a status roughly equivalent to that of a television producer today.

Radio today plays a different kind of role. No longer does it offer hours of live drama, name bands, and comedians. Radio today is highly competitive with television in news dissemination and carries the burden of music programming almost alone. However, occasionally commercial radio does venture beyond these two major areas of program format.

Educational radio employs much the same kind of format, except for the difference in content, but offers in addition a considerable amount of cultural-oriented and some instructional programming. Because of the nature of radio, it has at times become a one-man show or an announcer-operator presentation. This can be attributed to the vast amount of music which tends to dominate the airwaves. The versatility of radio has allowed man to carry the portable invention anywhere he goes. This in itself is one of radio's unique and outstanding qualities. More radio sets are sold each succeeding year, which suggests that radio's recovery from the onslaught of television is probably real and permanent.

The fact that radio may *sound* simple in its day-by-day operation does not mean that it *is* simple. On the contrary, it is a complex business, and still carries the same multiple burden of responsibilities to the Federal Communications Commission, the public, and its owners.

The following outline is designed to be a useful guide to the various program formats, staff organization and responsibilities, program planning and production, and operational procedure necessary for routine radio broadcasting.

I. OBJECTIVES:

A. The student will demonstrate his ability to use the writing

and speaking techniques used in radio broadcasting.

B. The student will understand the functions and responsibilities of staff personnel in radio stations.

C. The student will practice radio operation in an actual or simulated broadcast situation.

II. CONTENT:

A. The writer of the dramatic radio script should:
   1. Study good professional scripts for style, form, and ideas.
   2. Analyze taped shows.
   3. Identify the characters quickly and repeatedly.
   4. Clearly indicate the setting for each scene.
   5. Create the mood.
   6. Include transitions and transition devices.
   7. Establish point of view: first, second, and third person.
   8. Establish the conflict between the protagonist and antagonist. This can be done as follows:
      a. Between man and man.
      b. Opposing ideas and philosophies.
      c. Man against nature.
      d. Man against himself.
      e. Man against society.
   9. Restrict the number of characters.
   10. Economize on words.
   11. Use the tools of script writing (speech, sound effects, music).
   12. Decide on a theme (the summed-up idea of what you are trying to say).
   13. Select the theme music:
      a. Find appropriate music.
      b. Work in natural breaks.
      c. Use instrumental music only.
   14. Write for the ear.
   15. Begin action immediately.
   16. Make the opening clear, short, and interest-provoking. One can use sound, music, speech, or combination of the three.

17. Build interest through suspense.
18. Use simple plots:
    a. Avoid use of sub-plots.
    b. Build to a definite climax.
    c. Make the denouement clear, brief, and credible.

    Example: Announcer: From the days of the Cave Man . . .to the days of the Space Man. . .in 30 minutes.
    Sound: Metronome up for five seconds (cross fade with).
    Music: Up and out.
19. Practice word economy by trying to write the opening of a script in twenty-five words or less.

    Example: Mother: (calling) Mary.
    Mary: (off mike) Yes, Mother.
    Mother: Bring me my glasses, quick, I can't see who's getting out of the car next door.
    Mary: (coming in) Please, Mother. . . . They'll see you.
20. Practice effective dialogue techniques by:
    a. Using simple language.
    b. Avoiding long sentences whenever possible.
    c. Keeping characters alive by giving them lines in scenes in which they are present.
    d. Introducing characters early in the script or having other characters refer to the person who must be introduced later.
    e. Using action or sound words, as "thunder in the night", "the crash of rocks".
    f. Reading the dialogue aloud as you write in order to keep it as conversational as possible.
21. Let the characters advance the story by:
    a. Making the script realistic by using "throw-away" lines.

       Example: John: "Pass the butter, please."
    b. Giving the characteristic idioms, pet expressions, or other mannerisms.
22. Utilize sound to:

a. Set the scene or establish a locale.
b. Project action.
c. Create mood or atmosphere.
d. Achieve, extend, or intensify the climax.
e. Establish time.
f. Indicate entrances or exits.
g. Serve as a transition device.
h. Act as the theme signature or trademark.
i. Contribute to a montage effect.
j. Provide accentuation or emphasis.
k. Provide comedy effect.

23. Know the limitations of sound.
    a. Some sounds are self-identifying:
        (1) Horses' hoofs.
        (2) Door opening and closing.
        (3) Telephone dial.
        (4) Train whistle.
        (5) Door bell.
        (6) Fog horn.
        (7) Angry crowd.
        (8) Wind blowing.
        (9) Tinkle of glassware and silver.
    b. Some sounds need identification:
        (1) Rain.
        (2) Factory noises.
        (3) Automobiles.
        (4) Trains.
        (5) Waterfall.
        (6) Thunder.
        (7) Airplane.
24. Use transitional devices to bridge any gaps between scenes.
    a. Write a brief synopsis of each scene.
    b. Music.
    c. Announcer or narrator.
    d. Sound effects.
    e. Combination of the above.

B. The writer of a speech for radio should:
    1. Recognize the following problems before starting to write:

a. The speaker cannot be seen.
b. Direct material to an individual listener, therefore:
(1) Crowd psychology is not effective.
(2) Social pressure is absent.
(3) There are probably many distractions.

2. Become familiar with the conditions governing style:
a. The speech shall be personal and simple.
b. The organization of material shall be very clear, logical, simple, and repetitive.
c. The information should be concrete.
d. The speech should have a good summary.

3. Consider the following elements affecting timing:
a. The average reading rate varies from 125 to 150 words per minute.
b. Allow for announcer's introduction and conclusion.
c. Allow for other announcements which are to be made within your time limit.
d. The script must be timed to the exact second.
e. Consequently, the last two sections should be written in short segments which allow for provisional cutting.

4. Have an awareness of the following general "musts":
a. There must be a real purpose behind the talk.
b. The content must have interest and appeal to a particular audience.
c. The speech must be written in conversational style.
d. The language must be written in a simple manner.
e. The speech must catch the attention of the audience immediately.

C. The writer of radio news should:
1. Utilize "plain talk" or conversational style.
a. Use simple, concrete, and familiar words to avoid confusion.
b. Use simple sentence structure.
c. Avoid backing into sentences like "Married, he lived with his wife".
d. Avoid using empty words and syllables.
e. Avoid using superfluous adjectives.

f. Keep sentences short.
g. Use action verbs.
h. Repeat names.
i. Use the present tense only if the story is happening while you are actually on the air.
j. Beware of words which sound alike but have different meanings: raise, raze; feet, feat; hair, hare.
k. Avoid using tongue twisters.

2. Use the standard mechanics of news writing:
   a. Always double-space the copy.
   b. Never run a sentence from one page to another.
   c. Keep the copy "clean".
   d. Try to avoid running a story from one page to another.
   e. Never abbreviate unless you intend the material to be read as an abbreviation. Example: Mr., Mrs., FCC, YWCA, FBI.
   f. Write the word "dollar"; don't use sign symbols.
   g. Numbers are handled in the following manner:
      (1) Write out numbers one through ten.
      (2) Use figures for numbers 12 to 1,000.
      (3) Write out numbers over 1,000 like this: 5 billion, etc.
   h. Avoid using the colon, semicolon, and other punctuation, except for periods and commas.
   i. Mark all copy instructions so that the announcer won't read them aloud. Parentheses are preferred markings.
   j. Number the pages, beginning with page one, in the upper right hand corner.
   k. Use the word "More"when the story is continued on the next page, or use arrows at the bottom of the page and at the top of the next page.
   l. Use the symbol -o- to designate the end of one story and the beginning of another.
   m. Errors in copy should be blacked out.
   n. Be sure phonetic spelling is inserted for hard-to-pronounce names and places.

D. The writer for radio is required to have an acquaintance with many other specialized forms:
   1. Continuity (the portion between programs) as with: ID, PSA, SP, opening and closing.
   2. Programs vary:
      a. Variety shows.
      b. Interviews.
      c. Discussions.
      d. Documentaries.
      e. Disc jockey programs or personality musical programs.
      f. Classical music.
      g. Sports.
      h. Religious shows.
      i. Political shows.
      j. Editorials.
      k. News.
   3. On-the-spot and special events frequently require special beginnings, endings, cues, and transitions.
   4. Commercials, promotional and public service announcements require an infinite variety of approaches.

E. The radio performer should be familiar with:
   1. Effective microphone techniques.
      a. Remove staples from the script.
      b. Determine most effective position at the microphone.
      c. Vary distance for different effects.
      d. Make the sound realistic through:
         (1) Facial expression.
         (2) Eye directness.
         (3) Movement.
         (4) Gesture.
         (5) Posture.
         (6) Intensity vs. volume.
         (7) Whispers, shouts, screams, calling.
      e. Know the different types of microphones:
         (1) Dynamic or pressure.
         (2) Velocity or ribbon.
         (3) Condensor.
         (4) Crystal or carbon.

f. Know the different functions of microphones (directional, omnidirectional).
(1) Non-directional. (360 pickup pattern)
(2) Uni-directional. (One-way direction pickup)
(3) Bi-directional. (Two-way direction pickup)

2. Script-marking to indicate (by underlining, parentheses, etc.):
a. The actor's own speeches.
b. Microphone position.
c. Tempo.
d. Cuts and provisional cuts.
e. Emphasis.
f. Pauses.
g. Ad libs.
h. Interpretive comments.

3. Basic acting techniques:
a. Use the body for realistic effects.
b. Conceive the character through understanding:
(1) Voice and pattern.
(2) Cultural background.
(3) Regional dialect or foreign accent.
(4) Personality (timid, aggressive, outgoing, etc.)
(5) Whether dynamic or static.
c. Understand the interaction of the characters through timing:
(1) Normal response.
(2) "Biting the cue."
(3) Pausing.

4. Self-discipline:
a. Be prompt.
b. Have a pencil and use it.
c. Pay attention.
d. Watch the director.
e. Anticipate your cue.

F. The radio producer or coordinator:
1. Is responsible for the original concept or idea for the program.
2. Works with the director and the station to execute the idea through the script development and casting.

3. Coordinates the efforts of the central staff in readying the show for production.
4. Is responsible for finances, expenses, and promotion.
5. Turns the show over to the director for final details and airing.
6. Makes sure that deadlines are met.

G. The radio director:
   1. Works closely with the entire staff.
   2. Coordinates the efforts of the talent.
   3. Is the leader and must have the cooperation and respect of the entire staff.
   4. When dealing with the cast and crews should:
      a. Remain patient.
      b. Keep his poise.
      c. Respect the integrity of each individual.
   5. Works with the producer in using the following criteria:
      a. Purpose of the show.
      b. Available participants.
      c. Available facilities and equipment.
      d. Developmental effect on the group from simple to more difficult scripts.
      e. Budget.
   6. Studies the script for:
      a. Overall effect or purpose.
      b. Mood.
      c. Production needs and problems.
      d. Unusual effects.
      e. Marking cues, using a different-color pencil for each aspect: manual, truck, music, cast, etc.
   7. Works with the producer in casting:
      a. Auditioning:
         (1) General, to establish a file.
         (2) Specific, for a given script.
      b. Criteria:
         (1) Appropriateness of the role.
         (2) Doubling problems.
         (3) Vocal contrasts.
         (4) Acting ability.
         (5) Understudies in case of emergency.

8. Establishes the rehearsal routine.
   a First read-through:
      (1) Use for line and character development.
      (2) Set the pace and mood for each scene.
   b. Microphone rehearsal is used to:
      (1) Further line and character development.
      (2) Set perspectives (distance from mike, fades, off-mike lines, etc.)
      (3) Determine balance (voices of different levels must be placed so as to give desired balance).
   c. Production rehearsal (integration of sound, music, and cast):
      (1) The cast reads the lines preceding the sound and music; then the sound man brings in these elements, followed by more lines.
      (2) When cues are set, the director proceeds with the complete rehearsal.
      (3) The director should keep the volume of the talk-back low, so that he doesn't sound like a booming authority to the cast.
9. Times the script:
   a. Estimates the time.
   b. Marks provisional cuts.
   c. Times the read-through.
   d. Times the dress rehearsal.
   e. Notes time on script for every 30 seconds.
10. Works out standard hand signals with cast and crew.
11. Supervises the dress rehearsal:
   a. Runs through the entire show with all sound and music for final check on overall effect and timing.
   b. Allows no interruptions.
12. Spots the show:
   a. Polishes the rough spots that showed up in the dress rehearsal.
   b. Makes and times the final cuts.
13. Conducts the final check:
   a. To see if cast has all pages of script in order.
   b. To find out if he can see everyone in the studio and

if everyone can see him.

c. To make sure that master fader is turned down until five seconds before the show starts.

14. Puts the show on the air properly:
    a. By having the script in front of him so that two pages are open to enable him to see the cues a page ahead.
    b. By watching the time, checking against the time marked on the script.
    c. By listening and making necessary corrections.
    d. By throwing predetermined cues, speaking them aloud so that the engineer can hear them also.
    e. By remaining calm.

H. The radio engineer:
1. Must have a good working relationship with the director:
    a. The director takes the advice of the engineer about technical details.
    b. The engineer does not interfere with the director's interpretation of the show.
2. Sets up the studio:
    a. Maintains line-of-sight.
    b. Avoids room echo.
    c. Isolates production elements from each other.
3. Marks the script for sound, music, echo filter, and any other special effects.
4. Rides the gain during rehearsals and while the show is on the air.
5. Opens and closes the microphones at the right instant.
6. Cues records and tapes.

I. The staffing of a radio station also includes personnel in the following areas:
1. Promotions.
2. Clerical.
3. Music.
4. News.
5. Sports.
6. Sales.
7. Announcing.

J. Staff responsibilities are usually designated according to the area of work, as follows:
   1. Management:
      a. FCC correspondence and business.
      b. Relations with the broadcasting community.
      c. Technical progress.
      d. Relations with community and survey of audience composition.
      e. Sales and advertising.
      f. Network affiliations.
      g. Owner's interests.
   2. Operation:
      a. Traffic and continuity.
      b. Programming and production.
      c. Engineering and maintenance.

K. The operation of the radio station is carried on in many departments:
   1. Program planning includes the finding and utilization of program ideas.
   2. Scheduling is determined by the interests of the particular community:
      a. Time planned.
      b. Name of the program.
      c. Type of program.
      d. Frequency: daily, etc.
   3. Program logs are to be prepared in advance:
      a. Air time planned.
      b. Names of the program.
      c. Type of program.
      d. Service of program.
      e. Other information required by the FCC.
   4. Engineering practice must conform to FCC regulations and good operational routings.
      a. License requirements:
         (1) Station.
         (2) Personnel.
      b. Studio operation:
         (1) Turntables.
         (2) Microphones.

(3) Tape recorders.
(4) Console and related equipment.
(5) Handling of records and tapes.
(6) Operational routines.

5. A radio station's daily schedule consists of a variety of program items:
   a. News.
   b. Documentaries.
   c. Editorials.
   d. Music shows.
      (1) Top forty.
      (2) MOR (Middle-of-the-Road).
      (3) Easy listening.
      (4) Country and Western.
      (5) Background.
      (6) Jazz.
      (7) Semi-classical.
      (8) Classical.
      (9) Soul (Rhythm and Blues).
      (10) Underground.
      (11) Hard rock.
   e. Sports events.
   f. Talk shows (telephone and studio).
   g. Interviews.
   h. Special events:
      (1) Concerts.
      (2) Lectures.
      (3) City council meetings.
      (4) News actualities.
      (5) Election returns.
      (6) On-the-spot reports.
      (7) Political speeches.
      (8) Weather reports.
   i. Drama.
   j. Public service programs (PTA, service clubs, etc.).
   k. Continuity:
      (1) Program openings and closings.
      (2) Public service announcements.

(3) Program promotions.
(4) Station promotions.
(5) Station identifications.
(6) Emergency broadcast service announcements.

III. LEARNING EXPERIENCES:

A. Write four commercials using the same product each time:
   1. 60 seconds.
   2. 30 seconds.
   3. 20 seconds.
   4. 10 seconds
B. Write and produce a commercial using two or more participants.
C. Write some public announcements promoting a school or community activity.
D. Devise a weekly broadcast schedule:
   1. For a commercial station in a large city.
   2. For a commercial station in a rural area.
   3. For a school radio station.
E. Prepare a daily program log including everything required by the FCC.
F. Study and take the examination for the Third Class Operator's License.
G. Write and produce a ten-minute radio drama.
H. Plan and produce an interview program with a member of the faculty or of the community.
I. Demonstrate the correct method to edit and splice audiotape.
J. Plan and produce a weather report.
K. Tape-record several minutes of an original sports event.
L. Develop some criteria for critical judgment of radio programming:
   1. Music.
   2. News.
   3. Commercials.
M. Tape-record and note the numerous elements that constitute one hour of AM and FM programming.
   1. How many songs were played within an hour, a half hour?

2. How frequently were the station's jingles played? And when?
3. Were the commercials spread out or done in clusters?
4. When were the newscasts scheduled? How long were they?
5. Was the music primarily MOR or Rock, etc. . . ?
6. Did the station implement PSAs, promos, contests?

N. Discuss broadcasting ethics.
O. Report on the commercial broadcasters' code.
P. Report on some aspect of FCC rules and regulations.
Q. Plan and produce a fifteen minute "disc-jockey or personality" program.
R. Design an organizational chart showing the various jobs in a radio station (commercial or non-commercial) and how they are related to each other.

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UNIT SEVEN: TELEVISION PRODUCTION

A new television show introduced in the early fall may quickly meet its demise before winter has set in. Unlike radio, television is restless and is always searching for something new to satisfy the millions of viewers who represent every kind of intellect, vocation, and interest. Television eats up scripts and talent like a great mechanical cyclopean giant. Unlike radio, it needs hundreds of people on its staff to produce something entertaining not only to the ear, but also the eye.

It is the video portion of the TV script that has created many positions such as: floor manager, projectionist, cameraman, switcher, lighting man, make-up man, costumer, scene designer, and artist, none of which is needed for radio. Television production has opened new vistas for the choreographer and dancer, for the producer with imagination, and for advertising agencies that keep animators and cinematographers busy.

A unit on television production might consist of merely an introduction to scripts, people, and machinery through the latest texts, visits to TV studios at commercial or educational stations, and critical analyses of the various types of weekly programs. On the other hand, a radio-TV teacher may want to attempt actual production and to plan a unit of several weeks.

Naturally, unless a school is equipped or is planning to be equipped for closed circuit television, the cost of buying cameras, cables, switchers, monitors, lights, video-tape machines, and the many other pieces of equipment is high. On the other hand, so competitive is the market that many companies are offering equipment at considerable reductions. Because foreign engineers and manufacturers have been distributing television equipment as sophisticated as American equipment, prices are becoming more realistic. The criteria for equipment should include, in addition to price, durability and applicability.

Television production on a small scale can be done with a small, portable video-tape recorder which uses half-inch tape and a vidicon camera. This camera can be operated with available room lighting. A television set can be converted to receive the video-tape playback or monitors are available with one-camera units. With

this unit, students can learn camera shots, framing and movement, and the roles of the cameraman, the director and the actor.

Some radio-television-film classes may be in a school situated in a town having one or more educational stations. If so, a station may offer to let the class prepare programs for broadcast. This could be a "one-shot" possibility and an excellent service to the school.

The "ration and prime-time game" is so competitive that it is big news when a long-time popular program is moved from one spot to another. Some programs have been long-lived because their scripts are consistent with what the public wants in a story line, the actors are good, and the producers and directors know how to film or tape for the medium. (And, too, the programmers are aware of television's greatest audience viewing time.) There is a way to write and produce for television, and it is different from writing and producing for motion pictures and the theatre. This is the way the CBS production of Arthur Miller's "Death of a Salesman" was universally acclaimed: "This was no stage play taped for TV. Alex Segal directed a free-flowing television production that copied neither the forms of the theatre nor motion pictures, but combined their best features as only television can do."[1]

Unit VII attempts to introduce the roles of those who make up the television production team from the producer to the floor manager and cameraman.

I. OBJECTIVES:

A. The student will understand the staff positions and responsibilities in the television media.

B. The student will practice techniques used in television production.

II. CONTENT:

A. Station personnel.

The number of people involved in a television center is very large. Listed below are the important titles and the duties each entails.

1. Administrative and office.
   a. Station director or manager is in charge of the station.

[1]"Bettelou Peterson: The TV Set," by Bettelou Peterson, *Detroit Free Press* (May 6, 1966), 50.

b. Program director or manager plans the program schedule and makes production and announcement assignments.
c. Sales staff sells time to local sponsors.
d. Public relations staff handles publicity.
e. News and public affairs director handles news and public-service programs.

2. Production.
   a. Producer.
      (1) Determines the subject with the writer.
      (2) Determines the format with the writer.
      (3) Selects the talent.
      (4) Appoints the crew.
      (5) Plans visual and graphic aids with the director.
      (6) Plans slides and films with the director.
      (7) Arranges a performance date.
      (8) Establishes rehearsal dates and times.
   b. Director.
      (1) Directs and cues talent.
      (2) Makes floor plan of camera shots.
      (3) Calls the camera shots.
      (4) Selects takes.
      (5) Cues audio.
      (6) Cues switcher.
      (7) Cues projection.
      (8) Directs lighting crews.
      (9) Directs videotape operation.
      (10) Watches the time clock (this is often done by the assistant director - AD).
   c. Musical director is in charge of all music. (The musicians are not usually considered as part of the station personnel.)
   d. Artist designs and executes graphics and studio cards.
   e. Printer prints word-cards, name cards, and other visuals which are to be read by the viewer.
   f. Cinematographer shoots sequences, interviews, incidents, scenes, or objects for particular programs. (News programs employ more and more film footage in production.)

g. Make-up artist puts make-up on talent and is knowledgeable about colors of make-up and their variables under lights in color and black-and-white TV. As part of his job, he:
   (1) Neutralizes lighting with make-up.
   (2) Creates characterization.
   (3) Touches up actors' make-up during the performance.
   (4) Keeps make-up neat and stored properly.
   (5) Inventories and orders stock periodically.

h. Costumer designs costumes or locates same for talent, and is also aware of colors and shades for color and black-and-white TV. In addition, he:
   (1) Plans costumes (with director).
   (2) Measures actors for size of costumes.
   (3) Orders costumes.
   (4) Makes costumes.
   (5) Returns rented costumes or stores them in wardrobe.

i. Scene designer creates sets, backgrounds, and props; sometimes invents and builds machinery for TV production. In addition, he:
   (1) Selects patterns.
   (2) Selects tones (gray scale).
   (3) Creates special scenery effects such as rear projection slides and films, scenery cutouts, and cucoalorus or light patterns (with lighting man).

3. Technical personnel.
   a. Chief engineer has charge of engineers: audio, video, VTR, control room, transmitter.
   b. Technical director coordinates technical facilities and operations such as lighting, sound, cameras, switching, and remote productions.
   c. Audio engineer controls the sound portion of a telecast. He checks and controls the microphones used for special effects, music, etc.
      (1) Equipment used: microphones, tape recorders, turntables.
      (2) Music sources are: live, taped, recorded on disc.

(3) Sound effects sources are: manual, recorded.

d. Video engineer sometimes handles the switching and balances the picture composition.

e. VTR engineer records live programs on video-tape and plays previously taped programs and announcements.

f. Floor manager takes over in the studio as the eyes, ears, voice, and hands of the director; he is the link between the director and the talent through:
   (1) Cueing talent.
   (2) Relaying time cues.
   (3) Operating or supervising flip-stand.
   (4) Assisting in visual presentations such as: pulling pics on easel, pulling word cards.
   (5) Helping utilize masks and gobos.
   (6) Relaying lighting directions.
   (7) Assisting in property and scenery changes and lighting corrections.
   (8) Adjusting monitors for talent to view (if director approves).
   (9) Making talent feel at ease.

g. Lighting man adjusts the lights on talent and set to help create character and mood desired; operates dimmer during telecast. The lighting man's specific duties are:
   (1) Sets lights in advance (with director): key lighting, fill lighting, back lighting, highlighting, spots, scoops.
   (2) Run lighting sequences during performances.
   (3) Clear lighting board.
   (4) Store cables and floor-mounted lights.

h. Projectionist operates the 16mm. TV film projector, the slide projector, and the rear-screen projector. Some of his particular duties for the film chain are:
   (1) Threading and cueing up the projectors.
   (2) Running and stopping the projectors on cue.
   (3) Rewinding the film.
   (4) Inspecting and storing the film or returning it to the library or the director.

Some of his particular duties for the slide projector are:

(1) Arranging the slides in order.
(2) Changing slides on cue.
(3) Storing slides or returning them to the director.

i. Cameraman executes the many cues pertaining to camera operation as the director commands them. His major duties are:

(1) Uncapping camera lenses.
(2) Loosening camera stops.
(3) Focusing.
(4) Panning.
(5) Tilting.
(6) Following.
(7) Dollying in and out.
(8) Trucking right and left.
(9) Framing and composing picture.
(10) Zooming in and out.
(11) Racking lenses.
(12) Tightening camera head.
(13) Capping lenses.

4. Talent includes the following:
   a. Announcer as a performer: does straight announcing, presents commercials, demonstrates products, acts as MC or narrator or handles quizzes and discussions.
   b. Booth announcer delivers voice-over audio on station breaks and within local originations.
   c. Newscaster edits and presents news as supplied by correspondents, wire-service agencies, and local news press.
   d. Sportscaster presents sportscasts and play-by-play.
   e. Actor performs before the camera in a drama, comedy, or commercial.

B. Key TV personnel. (If the teacher were to set up a program of television production, there are particular roles which students should know well in order to perform professionally.)

1. The writer:
   a. Must be aware of all technical facilities used by TV.

b. Must use different approaches and styles for the various kinds of writing:
   (1) Continuity (that portion of the broadcast which bridges the gaps between succeeding programs): openings, closings, introductions, station identifications, transition material between musical selections, promotions which "plug" programs or the station.
   (2) News copy (content is similar in radio and TV; however, in TV, visuals are used to reinforce): slides, filmed actualities, and photographs are used extensively to expand and enhance TV newscasts.
   (3) Commercials are written to attract attention, stimulate desire, arouse interest, impel action. The visual speaks for the announcer and the words are few but pointed. The consumer's characteristics should be known. The following "helps" should be drawn upon: film, slides, animation, photographs, electronic effects, dancers, puppets. The following guidelines should be kept in mind: demonstrate the product appropriately, keep the commercial simple, and make the audio and video complement each other.
   (4) Catastrophe and emergency announcements are provided in various ways: news services, weather, public health and safety departments and organizations, special agencies (FCC, Emergency Broadcast System), through on-the-spot reporting.
   (5) Public service announcements are made in the public interest, not necessarily of an emergency nature.
   (6) Drama tells a story and is a special art:
      (a) The writer of drama must realize that the camera tells important aspects of the story, reveals character traits, hastens exposition and story line, acts as a narra-

tor by moving in and around the set, getting close-ups, cutting from one to another, dissolving, etc.

(b) The TV playwright gives extensive details about action and movement and gives suggested directions for camera movement and audio pick-up.

(7) Other program formats requiring special style and approaches for TV:

(a) Variety shows.
(b) Panel shows.
(c) Discussions and debates.
(d) Interviews.
(e) Music programs: concerts, recitals, amateur shows, school groups (vocal and instrumental).
(f) Lessons.
(g) Speeches.
(h) Sports.
(i) Children's programs.
(j) Women's shows.
(k) Special events.

2. The director:

a. Must be a unique personality who can work under pressure with production and technical staff and actors during the telecast.

b. Must be familiar with the handling of all of the equipment.

c. Must be able to turn the scripts into a final production:

(1) He must study the script for theme and content.

(2) He must consider the:

(a) Size of studio.
(b) Number of cameras.
(c) Size, design, and number of sets needed.
(d) Floor plan (placement of furniture, microphones, props, exits, equipment space).
(e) Special effects or visuals, sound effects, music, rear projection (RP).

(f) Actors needed: physical and emotional characteristics, coloring, age.
(g) Rehearsal time (walkthrough and dress).

(3) He must be well-versed in the use of the camera:
(a) Shots.
(b) Devices for transition.
(c) Composition.
(d) Cues and terms.

(4) He calls camera shots and angles, including:
(a) Shot (a single continuous picture on one camera).
(b) Head shot (picture showing head only).
(c) Shoulder shot (picture showing shoulder to head).
(d) Waist shot (waist-to-head picture).
(e) Knee shot (knee-to-head picture).
(f) Full shot (entire person).
(g) Tight close-up (TCU—very narrow angle shot, one feature, no background).
(h) Close-up (CU—narrow angle, part of object, no background).
(i) Medium shot [MS—medium-angle shot showing part of object or person (waist shot), related background].
(j) Cover shot (CS—very wide angle, covers whole scene).
(k) Establishing shot (wide angle, usually of an exterior, to establish proposed scene or relationship of details to be disclosed in later close shots).
(l) One shot (single shot, a shot of one person).
(m) Two shot (2S—shot of two people or objects).
(n) Three shot (3S—three people or objects).
(o) Reverse shot (RVS—opposite angle from existing shot of object or person).
(p) Angle shot (taken from any position except straight on the subject).
(q) Overhead shot (from directly overhead by

elevating the camera or using a mirror slanted above subject).

(r) Over the shoulder shot (taken of the subject past the shoulder or head of actor to whom he is speaking).

(5) The director uses various devices for transitions which:
   (a) Help to create a mood.
   (b) Show a change in time either by hastening or slowing the period between.
   (c) Effect a change in place, i.e., taking a shot of a person from behind as he leaves the room and quickly taking one of him with another camera as he enters another room.

(6) The terms used by the director for transitional devices are:
   (a) Take, cut, switch (a quick change from one camera to another as explained in above).
   (b) Fade out (gradually fading power from the camera so that the picture becomes black).
   (c) Fade in (the opposite of fade out).
   (d) Defocus (the picture is gradually taken out of focus).
   (e) Dissolve (the simultaneous fading in of one picture over another which is fading out).
   (f) Wipe [through an electronic unit, one picture replaces (wipes out) another].

(7) The director must compose pictures so that they communicate an effect or mood or satisfy a change for the eye by:
   (a) Placing the camera so that there is a difference in the height of the characters.
   (b) Utilizing the dimension of depth so that there is a difference in the size of the characters.
   (c) Angling the composition to give the picture movement.

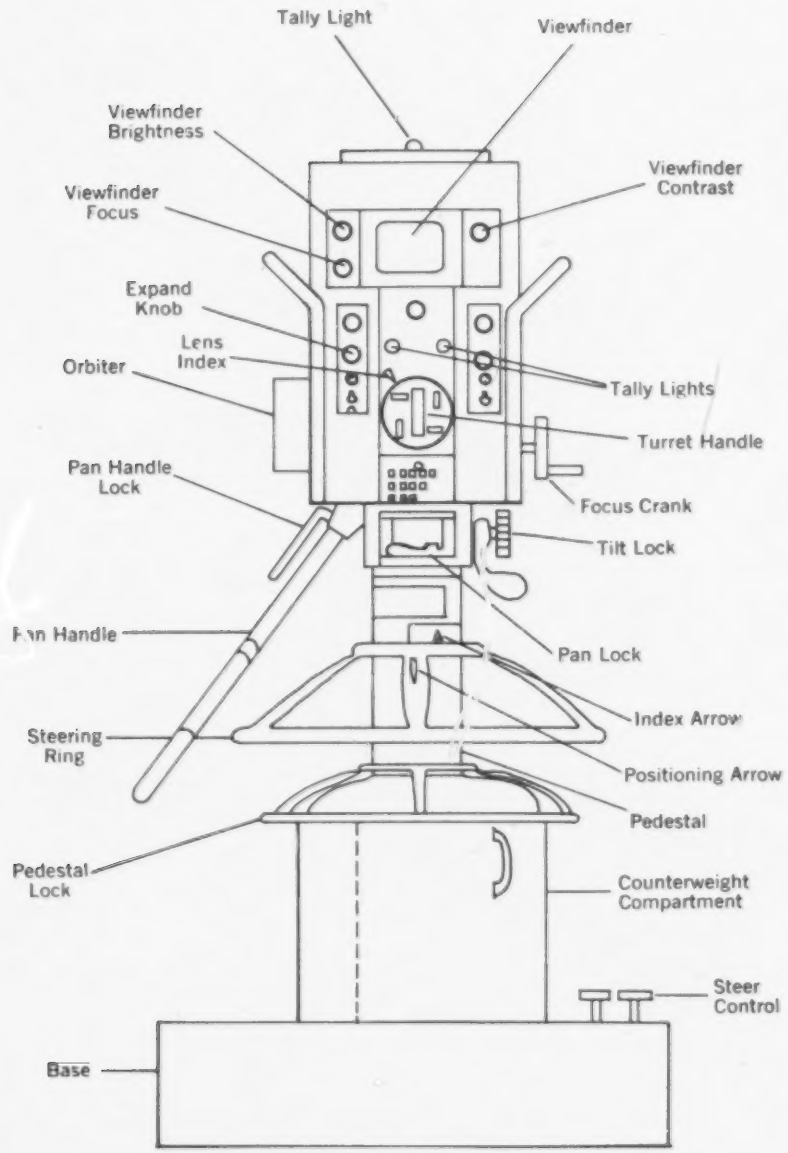
(d) Framing the objects tightly or loosely.
(e) Grouping the actors so that one is purposely dominant or the picture is balanced in some other way.

(8) The director must use a shorthand of terms which he can write on his script as cues for shots he will call during the production. There are particular cues for people handling different jobs, relating to:
(a) Camera movements.
(b) Switching.
(c) Audio.
(d) Projection.
(e) Opening and closing of the program.

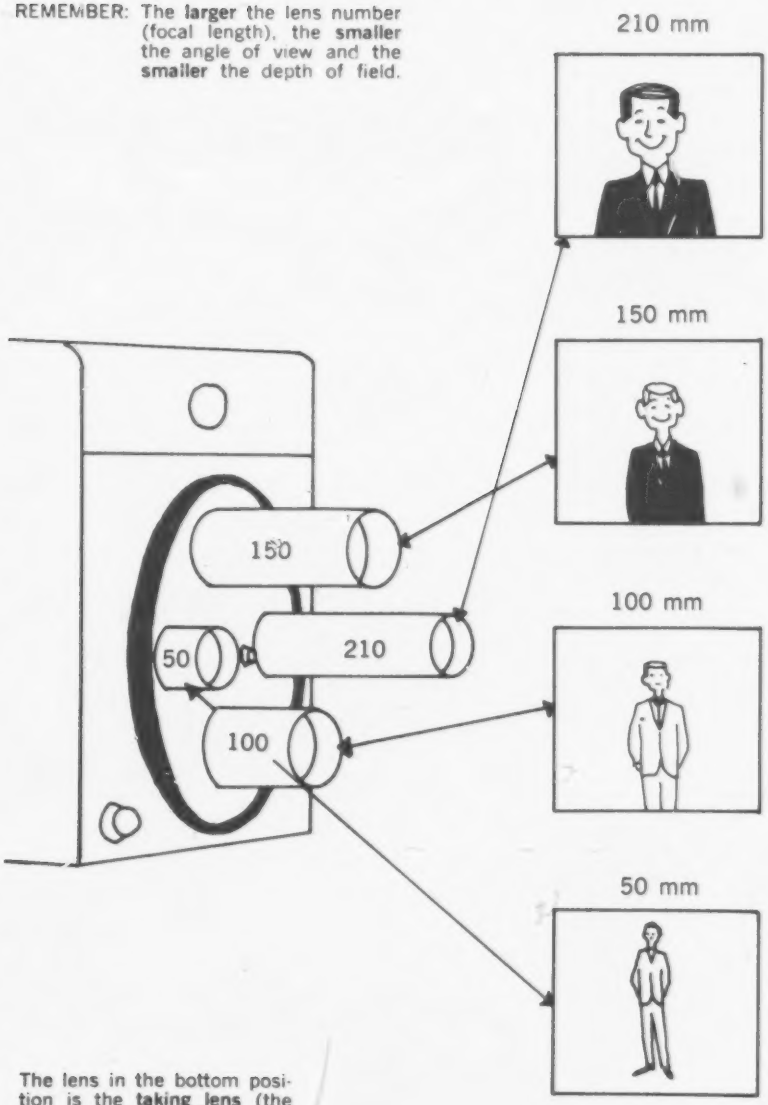
(9) The director must plan the visuals, which may be of several kinds:
(a) Credits.
(b) Photographs.
(c) Artist's drawings for studio cards.
(d) Films.
(e) Slides.
(f) Video-tapes.

(10) During all of the above planning, the director has been rehearsing the actors. Rehearsals involve:
(a) Working on characterization.
(b) Going through blocking.
(c) Checking camera shots.

3. The cameraman:
a. Must understand and execute cues from the director which pertain to camera operation.
b. Must master the movement of the camera in:
(1) Following talent.
(2) Panning.
(3) Tilting.
(4) Dollying.
(5) Trucking.
(6) Breaking to get another shot.
c. Should keep certain procedures in mind such as:


Tally Light
Viewfinder
Viewfinder Brightness
Viewfinder Contrast
Viewfinder Focus
Expand Knob
Lens Index
Orbiter
Tally Lights
Turret Handle
Pan Handle Lock
Focus Crank
Tilt Lock
Pan Handle
Pan Lock
Index Arrow
Steering Ring
Positioning Arrow
Pedestal
Pedestal Lock
Counterweight Compartment
Steer Control
Base

REMEMBER: The **larger** the lens number (focal length), the **smaller** the angle of view and the **smaller** the depth of field.



The lens in the bottom position is the **taking lens** (the one which is in front of the picture tube).

(1) Uncoiling cables and not running over them.
(2) Uncapping only on order of engineer.
(3) Keeping headset on at all times when the camera is uncapped.
(4) Capping and uncapping carefully in order to avoid disturbing the settings of lenses.
(5) Locking pan and tilt heads securely when leaving camera.

d. Should follow certain procedures during production such as:
(1) Keeping friction heads unlocked.
(2) Holding hands on the camera.
(3) Keeping eyes on the viewfinder.
(4) Avoiding sudden moves on the air.
(5) Adjusting framing gently if absolutely necessary.
(6) Being aware of obstacles while moving so as not to bump them.
(7) Composing pictures with background and foreground in mind.
(8) Watching headroom.
(9) Panning smoothly.
(10) Trying to keep eye level with people.
(11) Knowing the kind of shot you will get with what distance and from what angle.
(12) Knowing the camera lenses and the kind of picture you will get with each.

4. The talent:
(Talent includes all who perform before the camera, but for this unit we shall list the duties of the actor and those of the announcer who, as mentioned earlier, has many roles to play.)

a. While many of the rules of radio acting apply to television acting, the TV actor is obligated to learn a few specific rules. He should:
(1) Memorize his lines very quickly.
(2) Never lose character during a scene.
(3) Look at the character to whom he is speaking rather than at the camera. (Never look at the

camera unless directed to do so. The difficulty is the need to work *toward* a particular camera at a given time.)

(4) Learn how to work in small areas, giving the illusion of space. (The actor should become adept at moving to a point or spot established by the director for a particular camera shot. Often a piece of furniture or a mark chalked on the floor will help the actor.)

(5) Be ready for a cue from the floor manager without making it obvious to the viewing audience.

(6) Keep track of the microphone so that the audio pickup is good. There are times when the actor will have to project more than he would ordinarily.

(7) Be skilled in the use of facial expressions and pantomime.

(8) Study and analyze his character just as he would for the stage.

b. The announcer should know what each different kind of announcing job entails in the way of preparation and format. Each of the following requires a different approach:

(1) Master of ceremonies for:
  (a) Quizzes.
  (b) Variety shows.
  (c) Audience participation shows.

(2) Sportscaster.

(3) Narrator for:
  (a) Documentaries.
  (b) Children's programs or stories.
  (c) Humorous programs.

(4) Newscaster.

(5) Commentator.

(6) Discussion leader.

(7) Interviewer.

(8) Announcer for:
  (a) Commercials.
  (b) Station breaks.

(c) Public interest spots.
(9) Classical music.
(10) Popular music.
(11) Ad libbing.

c. The announcer and actor are obligated to train their voices and work on delivery. It is not possible to do this, however, unless they train their ears by listening to others and to themselves on audio-tape. The announcer and actor should practice and work on:
(1) Voice and diction, including:
(a) Resonance.
(b) Articulation.
(c) Volume.
(d) Quality.
(2) Delivery, including:
(a) Inflection.
(b) Emphasis.
(c) Vocabulary.
(d) Pronunciation.
(e) Tempo.
(f) Pacing.
(g) Emotion.
(h) Fluency.

5. Shooting newsfilm.
a. Shakiness.
(1) If at all possible, use a tripod to eliminate shakiness.
(2) If you must "shoot from the hip" to get the story, remember:
(a) Try not to use a wide angle lens.
(b) Use any kind of support handy, a car, a tree, a building, etc.
(c) *SQUEEZE*, don't pull or jar, the trigger.

b. Panning.
(1) If at all possible, don't pan.
(2) "The motion picture camera," says CBS News, "is designed to *record* action, not to *create* it."
(3) If you must pan, *DO IT SLOWLY AND*

SMOOTHLY.

(4) Remember that a lot of good news stories have been lost through overpanning and underexposure.

(5) Poor pans are very hard to edit out.

(6) Learn to pan by pivoting from the waist.

c. The cutaway.

(1) A cutaway is a short scene used to join two scenes which wouldn't otherwise smoothly match.

(2) The cutaway is the most *necessary* of all the editorial ingredients.

(3) The cutaway can be the brief scene of fans at a baseball game between the action scenes of the ballgame.

(4) Use your imagination in selecting your cutaways; they are everywhere.

(5) Make sure that you shoot enough cutaways and that you make them long enough.

d. Remember to make people your main objective while filming, since people are more interested in each other than objects.

e. Out-of-frame.

(1) Out-of-frame is an editorial device that allows the film editor to join unrelated scenes without using some other transitional device.

(2) The camera does not follow a subject out of the frame, it remains where it was when the scene began.

f. Over-the-shoulder.

(1) This means shooting something over the shoulder of one of the participants.

(2) Over-the-shoulder has become one of the more popular methods of filming most interviews.

g. Consistent exposure.

(1) When the cameraman gets to the scene of a story, he puts his "take lens" on what he thinks is the correct exposure.

(2) It is a good idea to be sure to put all of the

other lenses on the same setting or editing problems can develop.

h. Rundown.
   (1) This is the information the cameraman gives the station to tell them what the film is about.
   (2) A typical rundown should contain the following information:
      (a) The nature of the story.
      (b) The type of film used and film speed.
      (c) Any special processing instructions.
      (d) Any other information the station wants.

i. Framing the picture.
   (1) Framing the picture means getting a picture so that it will be able to be properly framed in the TV set.
   (2) The wise cameraman will allow about 1/8 of extra space in his view finder to get proper framing.

j. False reverse.
   (1) False reverse occurs when the viewer is jolted by a change in direction of the scene that actually didn't take place. If a cameraman crosses the street while filming a parade, on the screen the parade will change direction.

III. LEARNING EXPERIENCES:

A. Research.
   1. Look up the FCC rules on the broadcasting of:
      a. Commercials.
      b. Public service announcements.
      c. Station identifications.
      d. Emergency announcements.
   2. Find out what the NAB Code says in regard to:
      a. Commercials.
      b. Program content such as:
         (1) Violence.

(2) Language.
(3) Crime and criminals.
(4) Minority groups.
(5) Animals.
(6) Children.

c. Political programs.

3. Explain in an understandable manner how a TV camera works.
4. Report on various aspects of television:
   a. Closed circuit TV (CCTV).
   b. Community antenna TV (CATV).
   c. Educational television (ETV).
   d. Instructional television (ITV).
   e. Public Broadcasting System (PBS).
   f. International broadcasting.
   g. VHF television.
   h. UHF television.
   i. Phonevision.
   j. Network television.
   k. Communications satellites (COMSAT).
   l. Video-tape recorders.
   m. Microwave.
   n. Co-axial cable.
   o. Development of television.
   p. Development of color television.
   q. Pictorial composition.
   r. Problems of lighting.
   s. Special effects.
   t. Video cassettes.
   u. Chromakey.
   v. Electronic video recording (EVR).

B. Projects.
   1. Write a television script for the following:
      a. Newscast.
      b. Dramatic scene.
      c. Commercial (various lengths).
      d. Classroom lesson.
      e. Documentary.

2. Select two people, a director and an actor, and do a television performance of a:
   a. News and weather report.
   b. Dramatized commercial.
   c. Dramatic scene.
   d. Sports play-by-play.
   e. Musical performance.
   f. Television lesson.
3. Visit a television station. (Make reservation ahead of time and ask for someone to be prepared to answer student questions.)
4. Design a mask.
5. Demonstrate how to thread a film projector.
6. Do a mock direction of a two-minute TV segment.
7. Explain the use of a super; demonstrate.
8. Demonstrate or explain various matters concerning the camera, such as:
   a. Depth of field.
   b. Zoom compared to dolly.
   c. Focus.
   d. Panning.
   e. Trucking.
   f. Lenses, showing relation to size of picture.
   g. Kinds of shots (cover, full figure, close-up, follow, etc.)
   h. Handling and care of the TV camera.
9. Discuss several television variety programs and note the many uses of special effects.
10. Select a scene from a television play which requires about four characters. Distribute copies to groups of five. The extra member will be the director. Give each group enough time to prepare a performance. Discuss the differences in interpretation.
11. Ask several people to make floor plans and action-and-camera-shots of a television script. Have a class discussion of the different ways in which the same script was interpreted.
12. Divide the class into TV production teams. Ask each team to develop a ten-minute TV program, the purpose of which is to convince a school board that it should pur-

chase a complete closed-circuit television unit.

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UNIT EIGHT: FILM PRODUCTION

There is no *one* way to approach the teaching of a film course. Instead, anyone involved in such a task should remember that flexibility is the key to most good film courses. However, this does not suggest that the course be an unstructured one. One simple way to structure a film course is through the viewing and discussing of a broad variety of films; and frequently growing out of the first activity, a desire on the students' part to participate in the production of films. This provides the non-verbal as well as the verbal student an opportunity to achieve something of which he can be proud.

In selecting films for a course, inclusion of both American and foreign films should be considered, as well as a generous blend of feature, documentary, animated, and experimental films. In addition, various styles of film making should be considered. This suggests the inclusion of varying degrees of realistic films, comedies, and musical comedies. Although the films chosen should be generally well-made, relevent, and representative, it is good to include a pretentious or dishonest film for contrast.

Although films can be viewed by hundreds, they can be adequately discussed only in small groups. The inductive approach is appropriate because it builds on an analysis of the experiences students have had already. Lastly, discussions should be viewer-centered rather than teacher-centered.

Course content should be wide in scope. Students should be informed of the various roles in film making. The course should include production techniques, economics, tone, rhythm, pace, style, point of view, editing, sound, lighting, color, perspective, and composition. In addition, the grammar and vocabulary of the film medium are of primary importance. (Terms used in both television and film are, for the most part, interchangeable.) Late in the semester, when students have been armed with a certain degree of sophistication, the teacher should include the history of film: its early techniques, advances, the impact of sound, Hollywood in its heyday, and the effects of another medium—television.

In regard to actually producing films, a major consideration must be money. The class may work on one project as a group, students may work individually on films, or both may be in-

corporated. In addition, the choice between working in 16mm. or 8mm. depends largely on the availability of equipment and funds. Equipment for 16mm. work is both more expensive and sophisticated. Using it more closely approximates professional standards. However, because of its complexity, the student is likely to encounter more frustrations and failures. For the neophyte, Super 8 is often the answer. Equipment is generally simple to handle, and film costs are between one half and one third those of 16mm.

I. OBJECTIVES:

A. Film appreciation.
   1. The student will discover film techniques by watching movies and television with careful attention to details.
   2. The student will examine the effectiveness of shots and composition.
   3. The student will recognize the relationship of light to film sensitivity and to camera shutter speed.
   4. The student will differentiate among 8mm., 16mm., and 35mm.
   5. The student will distinguish among the uses of various lenses.
   6. The student will integrate a concept of slow motion, fast motion, and single frame animation.
   7. The student will differentiate among and understand the responsibilities of various individuals in film making: actors, cameramen, director, producer, grips, musicians, editors, etc.

B. Film making.
   1. The student will identify, compare, and contrast numerous film terms.
   2. The student will distinguish among and prepare some of the following tasks: acting, art direction, cinematography, direction, editing, lighting, set decoration, and scoring.
   3. The student will prepare scenarios based upon ideas for movies.
   4. The student will prepare a detailed shooting script after the scenarios have been approved.

5. The student will prepare a story board on a series of index cards.
6. The student will recognize the importance of caring for the camera and equipment.
7. The student will manipulate film apparatus:
   a. To use a light meter—mechanically and conceptually.
   b. To load the camera and to read various indicators.
   c. To use projection equipment.
   d. To use editing and splicing equipment.
8. The student will discuss critically and integrate into his own film the ingredients for sound tracks.

II. CONTENT:

A. Film basics.
   1. Size of film.
      a. The width of film determines, to a large extent, its clarity and expense.
      b. Professional films are frequently handled in a 35 mm. width and, in some cases, even 70mm.
      c. Originally, 16mm. was aimed at the home movie buff. Later, television adopted this format for news films and documentaries. Currently, it is popular with young independent film makers and many student film makers.
      d. The introduction of 8mm. allowed the home movie maker to make films more inexpensively, but projection was and is unsatisfactory for large audiences.
      e. Super 8 is a great improvement over regular 8. The film is still 8mm. wide, but the sprocket holes are handled differently, allowing the size of the frame to be nearly fifty percent greater, which leads to improved clarity in the projected image.
   2. The following are projection speeds in feet per minute:
      (1) 35mm. / 90 fpm.
      (2) 16mm. / 36 fpm.
      (3) Super 8 / 14.8 fpm.
      (4) Regular 8 / 13.5 fpm.
   3. The illusory medium.

a. A piece of motion picture film is actually a series of still photographs, each a bit different from the previous one.

b. Persistence of vision, in effect a time lag in one's eye, allows one frame after another to be projected; and one thinks he sees motion. Instead the eye does not record the blackness that follows each frame of the film. In reality, when viewing an hour film, one actually looks at an empty screen for nearly a half hour.

c. In 16mm., twenty-four frames per second (fps) are projected in order for the illusion to be a smooth one. In Super 8, the projection speed is generally 18 fps.

4. Types of films to make with students.
   a. Live action:
      (1) Narrative.
      Note: Because of the nature of Super 8 film, it is very difficult to synchronize lip movement with the sound track. The following methods suggest ways to solve this problem:
         (a) Pantomime.
         (b) Cue words *à la* silent film.
         (c) Music.
         (d) Narration.
         (e) Long shots with voiceovers.
      (2) Creation of a mood.
         (a) Effects of slow and fast motion.
         (b) Effects of lighting.
         (c) Effects of camera angles and movement.
         (d) Consideration of sound track to reinforce visual image.
      (3) Documentary.
   b. Animation.
      (1) Drawing pictures.
      (2) Modeling clay.
      (3) Manipulation of objects.
      (4) Manipulation of humans (pixilation).

(5) Manipulation of cutouts.

c. Drawing or painting directly on film.
   (1) Use either 16mm. or Super 8.
   (2) Strip emulsion with one part water and one part bleach.
   (3) Clear leader is available for those who do not want to be bothered with cleaning off old film.
   (4) Film can be scratched releasing different colors, depending on depth of scratch. Also, simple images may be repeated frame after frame.

d. Still photographs.
   (1) Light with two photofloods at 45 degree angles. This kills glare on page.
   (2) Magazines with large format are best to use.
   (3) Numerous photographs can be used to tell a story, create a mood, present a documentary, or even as the basis for animation.

e. Re-editing of commercially prepared films.
   (1) Television stations are often willing to donate commercials and news films that are no longer of any use to them.
   (2) Old movies and cartoons are available in many stores' film departments in the Super 8 format.

5. Handling the sound track.
   a. Some sophisticated cameras have an internal sync pulse generator which is attached electrically to a tape recorder.
   b. Most Super 8 cameras have no provision for sound, but there are many developments in this area.
   c. After a film is edited, Kodak will add a magnetic strip along the edge of the film which is much like standard recording tape. Sound is then added via a sound Super 8 projector and, of course, can be heard only when the film is projected on a sound-equipped machine.
   d. Many students simply use a separate tape system that they run simultaneously with their films.
   e. When using tape, recording should be done at 7½ inches per second for the greatest fidelity.

f. The following are some simple approaches to soundtracks:
   (1) Recorded music (orchestral, instrumental, or vocal).
   (2) Recorded sound effects.
   (3) "Wild" sounds (e.g., traffic, nature, crowds).
   (4) Electronic sounds.
   (5) Silence (certain film passages can be more effective without sound).
   (6) Narration (monologue, poetry).

6. Lenses.
   a. Normal (perspective appears normal to viewer).
   b. Telephoto (image as well as any camera movement is magnified. Subject engaged in movement toward or away from camera appears to make little progress).
   c. Wide angle (this lens allows the camera to get in close to subject but still see an overall view. Effect on movement toward or away from camera is the opposite of the telephoto lens. Movement is exaggerated; progress appears rapid).
   d. Zoom lens (camera remains stationary but gives appearance of moving closer to or farther away from subject).
7. Film speeds.
   a. The normal speed for Super 8 is 18 fps; for 16mm., 24 fps.
   b. Slow motion, which allows for detail and graceful action, is usually shot at 32 fps, 48 fps, or 64 fps.
   c. Fast motion, which creates a comedic effect, is usually shot at 12 fps.
8. Camera angles.
   a. High (camera is placed above subject. This angle can give the effect of diminishing a character's stature or of making him appear vulnerable).
   b. Low (camera is placed on a lower plane than the subject. In effect, looking up at the subject increases his stature and can imply he possesses characteristics such as strength and bravery).

c. Flat (camera is on the same plane as the subject. This angle can be considered normal, having a neutral effect on the subject).

9. Standard shots.
   a. Long shot (this is also referred to as the establishing shot. The viewer sees the subject from a distance which allows the inclusion of the general surroundings).
   b. Medium shot (the viewer sees the subject in relation to his immediate environment. This shot is often used as a transition from the long shot to the close-up).
   c. Close-up (the viewer sees only the subject).
   d. Extreme close-up (the viewer sees only a part of the subject. This shot is often used to provide dramatic impact).
10. Camera movement.

    Note: Since these terms are largely identical with television terms, they will not be defined here.
   a. Pan.
   b. Tilt.
   c. Zoom.
   d. Dolly.
   e. Boom.
   f. Tracking.
   g. Travel.
11. Optical effects.

    Note: These effects are usually created in a film laboratory. The Superior Bulk Film Company, 442-450 North Wells St., Chicago, Illinois 60610, has materials which may be attached directly to the film to create these effects:
   a. Dissolves.
   b. Fades.
   c. Superimpositions.
   d. Wipes.
   e. Iris.
   f. Cut.
12. Light.

    This element can do a great deal to create moods and

affect appearances of objects. When shooting outdoors, the quality of light can vary tremendously with the time of day and weather conditions. Light can be soft and gentle or sharply glance off objects. Silhouettes and long shadows can add dramatic impact to a shot. If light hits the subject straight on, it often makes the subject look hard and flat. Light coming from one side gives form and roundness to the object. Surface textures can be shown clearly when light hits the subject at an angle.

a. Light meters.
   Although most 8mm. cameras are equipped with electric eyes which automatically set exposure controls, it is wise to teach students to use light meters.
   (1) The reflected light meter records the amount of light reflected from the surface of the object.
   (2) The incident light meter records the light falling on the subject.

b. F/stops.
   (1) The light meter determines the f/stops to be used at so many frames per second.
   (2) The f/stops are standardized within the following series: f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, and f/22.
   (3) The f/stop which allows the greatest amount of light to strike the film is f/14; the f/stop which allows the least amount of light to strike the film is f/22.
   (4) As one moves to the right, from f/1.4 to f/22. each stop exposes the film to twice as much light as the previous stop.

c. The key light is the main source of illumination and is placed in front of and to one side of the subject.

d. The fill light is used to diminish harsh shadows created by the key light. It is usually opposite and somewhat weaker than the key light.

e. The rim light or kicker is placed behind and above the subject. It highlights the subject, giving sheen to the hair, and separates it from the background.

B. Student roles to be considered in making a class film. (Many students handle more than one task in making their films.)
   1. Script writers.
   2. Actors.
   3. Director.
   4. Cameraman.
   5. Lighting.
   6. Sets.
   7. Costumes.
   8. Props.
   9. Grips.

C. Suggested films.
   1. Feature length.
      a. *Hud.*
      b. *The Loneliness of the Long Distance Runner.*
      c. *The Bicycle Thief.*
      d. *Henry V.*
      e. *The Hustler.*
      f. *To Kill a Mockingbird.*
      g. *On the Waterfront.*
      h. *The Golden Age of Comedy.*
      i. *La Strada.*
      j. *David and Lisa.*
      k. *Twelve Angry Men.*
      l. *High Noon.*
      m. *Citizen Kane.*
      n. *Ballad of a Soldier.*
      o. *Requiem for a Heavyweight.*
      p. *Raisin in the Sun.*
      q. *The 400 Blows.*
      r. *Shane.*
      s. *Paths of Glory.*
      t. *Nobody Waved Goodbye.*
      u. *Gate of Hell.*
      v. *Spellbound.*
      w. *The Treasure of the Sierra Madre.*
   2. Shorter, documentary, animated, and art films.
      a. *Neighbors.*
      b. *Corral.*

c. *Dream of the Wild Horses.*
d. *The Red Balloon*
e. *Night and Fog.*
f. *Rainshower.*
g. *The Cow.*
h. *Pigs.*
i. *An Occurrence at Owl Creek Bridge.*
j. *The Hole.*
k. *Glass.*
l. *Clay: Origin of the Species.*
m. *The Critic.*
n. *The Flight of Friendship Seven.*
o. *New York, New York.*
p. *The Hat.*
q. *Why Man Creates.*
r. *The Cinematographer.*
s. *The Art of the Motion Picture.*
t. *Basic Film Terms.*
u. *Values and Interpretations: Gunsmoke.*

III. LEARNING EXPERIENCES:

A. Select a film adapted from a play, short story, or novel. Discuss what was particularly effective in regard to the chosen medium.
B. Adapt a short story into a shooting script. Discuss how and why it was altered.
C. Tape a 16mm. commercial to a window. Analyze how many shots it includes. How many frames per shot are used? Consider its overall organization: its length, timing, effects of different shots. Show it to the class and discuss your findings.
D. Analyze a comic book in terms of the type of "shots" used. Is it filmic in regard to the sequences used?
E. Take a photograph from a magazine that could represent a long shot. Draw frame lines on it to indicate a medium shot, close-up, and extreme close-up.
F. Observe people engaged in different activities and occupations. Note the detail in their behavior. Use the actions you have observed in a pantomime or other acting situation.
G. See and review at least four films.

H. As a semester project, assemble a notebook in which you have collected articles on films and reviews. Excellent sources are *Time, Life, Saturday Review*, among others. If you own the magazine, cut the review out; if not, you can easily make a copy on a copier. Underline significant points. If you have seen the film, state where you agree or disagree with the review.

I. Do a research paper on some aspect of film making.

J. Become an expert on one director and his work.
   1. Make a comprehensive list of his films.
   2. Nationality.
   3. Periods (1910-1925, for example).
   4. List his major influences.
   5. List major characteristics of style.

K. Cut out pictures from magazines illustrating various shots and angles.

L. Build a zoetrope.

M. Build a dolly for use in school films.

IV. BIBLIOGRAPHY:

Catalogs

All the film distributors listed here will send catalogs upon request that deal with motion pictures or films pertinent to film study. In addition to describing the films that they offer, many give valuable information on the motion picture industry and its history.

Audio Film Center, Inc., 2138 East 75th Street, Chicago, Illinois 60649

Brandon Films, Inc., 221 West 57th Street, New York, New York 10019

Churchill Films, 662 North Robertson Blvd., Los Angeles, California 90069

Contemporary Films, Inc., 828 Custer Avenue, Evanston, Illinois 60202

Doubleday Multimedia, A Division of Doubleday and Company, Inc., 1371 Reynolds Avenue, Santa Ana, California 92705.

Encyclopedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611

Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, New York 11435.

Film Center, Inc., 20 East Huron Street, Chicago, Illinois 60611.

Films Incorporated, 4420 Oakton Street, Skokie, Illinois 60076.

Grove Press, Inc., Film Division, 124 Mercer Street, New York, New York 10012.

Janus Films, 745 Fifth Avenue, New York, New York 10022.

Mass Media Ministries, 2116 North Charles Street, Baltimore, Maryland 21218.

Newenhouse/Novo, 1625 Willow Road, Northfield, Illinois 60093.

Roa's Films, 1696 North Astor Street, Milwaukee, Wisconsin 53202.

Swank Motion Pictures, Inc., 201 South Jefferson Avenue, St. Louis, Missouri 63166.

Sterling Educational Films, 241 East 34th Street, New York, New York 10016.

Teaching Film Custodians, Inc., 25 West 43rd Street, New York, New York 10036.

Twyman Films, Inc., 329 Salem Avenue, Dayton, Ohio 45401.

Universal 16, 221 Park Avenue South, New York, New York 10003

Periodicals

A.F.I. Education Membership Newsletter. The American Film Institute/Education Division, 1815 H Street N.W., Washington, D.C. 20006.

Film Fan Monthly. 77 Grayson Place, Teaneck, New Jersey 07666.

Filmmakers Newsletter. 80 Wooster Street, New York, New York 10012

Film Nut News. 706 Homewood Avenue, Dayton, Ohio 45406.

Media and Methods. 134 North Thirteenth Street, Philadelphia, Pennsylvania 19107.

Reel News. Detroit Association of Film Teachers, 6565 W. Outer Drive, Detroit, Michigan 48235.

See. George A. Pflaum, Publisher, 38 W. 5th Street, Dayton, Ohio 45402.

Show. Show Publications, Inc., 6548 Sunset Blvd., Hollywood, California 90028.

APPENDIX A

TERMS

ACOUSTICS: The way walls, floor, and ceiling of the room react to sound; the manner in which they absorb, reflect, or reinforce it by sympathetic vibration.

AD LIB: To extemporize lines not written in the script.

ANIMATIONS: Inanimate objects or cartoons which are photographed in such a way that they seem to move.

AMPLIFIER: A device for increasing the power of a signal without appreciably altering its quality.

ASPECT RATIO: The proportion of picture dimensions in TV; relation of (three units of height measurement) to width (four units).

AUDIO: The sound phase of television (music, voice, sound).

AUDITION: To try out for a show.

BACKGROUND: A sound effect, musical or otherwise, designed for use behind dialogue.

BACKGROUND PROJECTION: Projection of a scene on a translucent screen; used as a background for a studio set. Also called "rear screen projection".

BACK TIME: Timing a script backward from end to beginning. Allowances are made for cuts and stretch. Running time is indicated every 15 or 30 seconds in margins of the script. Back timing gives the "must" or ideal time that keeps the show on the nose.

BEAM: The direct horizontal line running from the center of the microphone; the area from which voices are picked up for transmission with maximum clarity.

BIT: A small part in a show.

BLACK OUT: On a given signal, cut the entire program off the air, perhaps pick up a film sequence on remote.

BLOCKING: Sometimes called a breakdown. Preliminary working out of the basic pattern of movement and/or camera shots in a show or scene. Usually done by the director before the first run.

BLOOM: Brilliant glare resulting from strong light on white or polished subjects in picture, as with flares off bright metal.

Also caused by maladjustment of a camera's video control unit.

BLOOP: An obvious error in performance, by cast or production crew.

BOARD FADE: The manual and electrical fading out of a program on the studio control board.

BOOM: The mechanical structure for moving a suspended microphone overhead. Also the action of moving a camera crane up or down.

BRING IT UP (BUILD IT UP): An expression meaning to increase the volume of sound in a scene or a piece of music.

BURN IN: Phenomenon of image retention on a pickup tube after intended appearance. More common in older I.O. tubes, and especially when strong contrasts of light areas (as in titles) prevail.

BUST SHOT OR CHEST SHOT: A shot which shows a person from the chest to just above the head.

BUSY PICTURE: A picture with so much background detail that it is confusing. It usually spoils the actor's scene since there is a tendency for the viewer to watch the scenery or props instead of the action.

CALL LETTERS: Initials assigned by the FCC to identify stations.

CANS: Head phones.

CATHODE-RAY TUBE: An electron tube in which the electrons are freed from their source in a ray or beam. The receiver picture tube is a cathode-ray tube.

CHANNEL: Bank of frequencies given by the FCC to each radio and television station for broadcasting.

CHARACTER: A character actor, who does older parts or parts that have peculiar voice qualities and looks.

CLEARANCE: Permission to use copyright material on the air.

CLIFF-HANGER: A radio serial thriller.

CLOSED CIRCUIT: A live television program not telecast but shown on monitors or viewing screens for the benefit of a selected audience. Used also for auditions or private showings to a restricted audience.

CLOSE-UP: A picture made with the camera so close to the subject that only the head and shoulders are shown. It may also be made by the use of a long-focus lens.

COLD: Describes the opening of a radio program which begins without theme or musical introduction or background.

COMMERCIAL: A program with a sponsor, also may be the advertising "plug" of the show. Sometimes the term means the same as credit.

COMMERCIAL CREDITS: Specific mention of the client or his product.

COMMUNITY ANTENNA TELEVISION (CATV): The employing of a master receiving TV antenna to gather and disseminate programs, generally for profit.

CONTINUITY: The script prepared by an author, an advertising agency, or the radio station which insures the smooth running of the show.

CONTRAST: The range between high lights and deepest shadows in a picture. Also referred to as "gamma" in film-emulsion density.

CONTROL BOARD (board): Also called control panel or mixing panel. The panel before which the control engineer sits and which includes the volume indicator and various faders.

COPYWRITER: One who writes that which is to be read over the air.

COVERAGE: The area in which a station or network of stations can be heard according to accepted engineering standards.

COVER SHOT: An overall or wide angle shot which can be switched to immediately with safety when a close-up becomes obstructed or disorderly. Also called a protection shot.

CRANE: Device for raising camera and cameraman to a height.

CRAWL: Graphics that move slowly up the screen, usually credit copy.

CREDITS: Acknowledgment of source of any program material.

CROSS-FADE: To fade in one sound from one source while sound from another is faded out.

CU: Close-up. Designation of a close-up camera shot.

CUCOALORUS: A cut-out pattern through which light is projected to create a distinct pattern on a background.

CUE: A signal, verbal or visual, to proceed with action as rehearsed or indicated in the script.

CUE SHEET: An orderly tabulation of program routine containing all cues.

CUSHION: The "fill-in" used at the end of a show which runs short of the rehearsal time on the air. Generally the musical theme or mood music is used for this purpose.

CUT: To stop transmission or any part of the program abruptly either by stopping performers or by use of an electrical switch on the control board. Also, the deletion of program material to fit prescribed period of time.

DB: Decibels. A unit of sound measurement. Also means delayed broadcast.

DEAD AIR: Any place in the program where there is no sound due to slow pick-up, fluff, or poor transmission.

DEAD AREA: The area next to or behind the microphone, from which sounds are picked up with a muffled or distant sound.

DEAD END: The end of the studio in which there is very slight reverberation.

DEFINITION: The degree of clarity in a picture. Good definition reflects good focus, sharp outlines, and realistic depth. (Excellence of resolution.)

DEGRADATION: Loss of quality through transfer or dubbing or use.

DIMMER: Device to control the brightness of light.

DIRECTIONAL ANTENNA: An antenna, either broadcasting or receiving, which sends or receives radio waves better in some directions than in others.

DISSOLVE (Lap): An electronic transition from one scene to the next. One scene vanishes at the same time the succeeding scene overlaps.

DOLLY: A small wheeled platform on which the camera is mounted. To "Dolly In" or "Dolly Out" means to move the camera forward or back.

DOWNSTAGE: "Bring it closer" or move closer to the camera.

DRAMATIC PAUSE: A hesitancy or break in the reading to connote an emotional reaction.

DRESS: A program rehearsal exactly as it is to be broadcast.

DRY RUN: A rehearsal without the use of cameras, held either outside or in the studio.

DUBBING: A term used in making transcriptions. "Dub it off" is to record all or part of the program. "Dub" also means to add sound to the recording.

ECHO CHAMBER: A special device used to pick up reverberations in the live end of a microphone during a broadcast. The effect is that of a person talking or singing in a large concert hall.

ET: Electrical transmission or records.

FADE OUT: The manual and electrical diminution of volume to zero.

FADING: Unwanted lessening and increasing of an audio signal.

FEEDBACK: Howling in a speaker caused by a kickback of sound waves from an element of the audio system (speaker) to a prior element (microphone) within acoustical range.

FILL LIGHT: Effective lighting of principal subjects.

FILM CLIPS: Shots or sequence on film, either specially shot for a given program or cut from stock footage.

FILMED ACTIVITIES: On the spot report and/or interview within a newscast.

FILTER: An electrical device used to change tone characteristics by eliminating frequencies.

FLATS: Units of scenery for stage use.

FLIP BOARD (or Flip Stand): Device for manual changing of visuals—dropping or pulling.

FLOODLIGHT: A powerful light which illuminates a considerable area. An open or unconcentrated light.

FLUFF; FLUB; GOOF: A bad mistake, fluffing a line, missing a cue, blowing up.

FOCUS: To focus a lens is to move it back and forth until the image is seen, sharp and clear, on the ground glass. The focus is the meeting point of the various light rays which pass through the lens.

FOLLOW: An order to the cameraman to follow the talent while in motion and keep talent in focus while moving.

FOOT-CANDLE: A unit of measurement applying to light intensity.

FRAME: Each separate rectangle of film or strip of film. In television: one entire scanning of 525 horizontal lines a still picture every 1/30 of a second.

FRAME UP: Center the picture or improve its composition.

FREEZE; FREEZE-IT: Hold as is. Keep camera and positions steady.

FREQUENCY: The number of cycles, or complete motions, of

electromagnetic waves per second.

GAIN: Strength of current which makes sound louder or picture brighter. To "ride the gain" is to control the volume.

GHOST: A fuzzy secondary image on the screen, caused by halation from an original image, or more commonly from improper electronic control in transmission or reception.

GRAY SCALE: Scale of shades of gray.

GROUP SHOT: A shot of several people.

HAM: An amateur radio operator. Also used to stigmatize poor acting.

HEADROOM: Free space on the TV screen between the top of any figure or a performer's head and the upper boundary of the screen.

HITCH-HIKE: A short commercial immediately after sign off of a program but still within the sponsor's contracted time. The commercial usually pertains to another of the sponsor's products.

HOT SPOT: A limited area that is too brightly lighted for the rest of the picture.

I.D.: Station identification.

IDIOT SHEET: Script copy or cue lines written in bold letters on a large sheet or card to prompt actors or announcers.

IMAGE ORTHICON: The successor of the iconoscope pickup tube for studio or outdoor usage. Far more sensitive, it calls for only ten per cent of the light formerly used.

KEYLIGHT: A primary light source.

KILOCYCLE: A frequency of one thousand cycles per second.

KINESCOPE: The picture tube in the receiver. Also the transcribed television show when shown at a later date.

KNEE SHOT: A shot which covers a person from the knees to just above the head.

LAP: See "Dissolve".

LEADER: Film in advance of picture or sound, for threading through projector before picture or sound starts. Also used on audio-tape.

LENS TURRET: Arrangement on camera which permits rapid change of lens.

LEVEL: A voice check to determine the lowest and highest volume.

LIMBO: Lights the subject with a black background.

LINE OF SIGHT: A path from the transmitting to the receiving antenna with no obstructions in the way.

LIP SYNC: Synchronization of live sound with projected film; or the reverse in TV—synchronizing action and lip movement with recorded sound.

LIVE TITLES: Titles picked up directly by the studio camera.

LOG: A record kept by stations and networks of every minute of broadcasting (radio and TV), including errors. It is required by the FCC.

LS: Long shot. A wide or establishing shot.

MAKE-UP; PANCHROMATIC: Make-up intended to be photographed with panchromatic or color negatives.

MAKE-UP; STRAIGHT: Make-up so applied that the features will reproduce their natural appearance in the photograph.

MASK: Used to block out part of the lens for a special effect.

MATTE: Cutout for use in front of a lens—foreground scenery, picture-shape, shadow-pattern.

MCD, MCR: Master control desk, master control room. The nerve center or traffic control point in a station's operation, the final step before the picture or sound is released over the local transmitter.

MED, MS: Medium shot on camera.

MEGACYCLE: One million cycles.

MIX: To manipulate the faders on the control board—blending two or more program elements for desired program balance.

MOIRE: A shimmering effect in a picture resulting from the use of fabrics which clash with the electronic system that re-creates an image.

MONITOR: Equivalent to television receiver (usually in studio).

MULTIPLEXER: A mirror device to reflect material from the various projectors into the camera lens.

MURAL: Scenic backdrops, usually enormous photographic enlargements of exteriors.

NOISE: A spot of unwanted light in a television picture. A noisy picture is one with flashes of light all over it.

NS: No sound, such as silent film.

OFF CAMERA: Performance not seen on camera such as narration of a film.

ON THE NOSE: The program is running right on schedule.
OPEN COLD: To open a show without one or more of the following: theme, musical introduction, rehearsal.
ORTHICON: An image orthicon or studio orthicon camera tube.
OS: Off stage.
P.S.A.: Public Service Announcement.
PACE: The speed of the show.
PAN (from "panorama"): Smoothly swinging the camera in any direction (usually horizontally or vertically) to follow action or to carry the eye from one section of a set or object to another.
PEAK: The high point on the volume indicator.
PEDESTAL: Structure on which camera is mounted; a dolly devised particularly for TV; also a direction for elevating or lowering camera.
POTS: Short for potentiometers. The volume-control knobs on the audio engineer's desk.
PRE-EMPT: To remove a local program from regular air time to accommodate network program desiring same time spot (slot).
PREMIERE: The first showing of a new motion picture film or the opening of a new television show.
PRIME TIME: The most popular air time: Radio—6:00-9:00 a.m., and 3:00-6:00 p.m.; TV—8:00-11:00 p.m.
PRODUCTION: The building, organization, and presentation of a program.
PRODUCTION DIRECTOR: The man who is in charge of a certain program or all programs in a radio or television station.
PULL CARD: Title card, etc., pulled by hand to expose another to the camera.
RACKING: Changing lenses. Operating a focus knob on the camera.
RADIO WAVE: An electromagnetic wave made by quick changes of current in the broadcasting antenna and traveling through space at the rate of 186,000 miles per second.
"READ-Y": Sounds as if it were being read.
REAR PROJECTION: (See BACKGROUND PROJECTION.)
REMOTE: Pickup of a program or event outside of a studio—by field equipment or mobile unit.
RIDING GAIN: The control of volume of program by engineer.
ROLL DRUM (title drum, crawl): A device on which visuals,

credits, etc., are mounted in order that they might be moved continuously from the bottom of the frame to the top, or vice versa.

ROLL IT: The signal to start film.

RP or RVP: A scene is projected on a transparent screen in front of which are the actors and the props. Both are photographed simultaneously and in absolute synchronization. Also used to fake locales and atmosphere. Sometimes called "background projection".

S.P.: Station promotion.

SCANNING: The line-by-line sweep of the electron beam across the screen in the camera and receiver tube.

SCOOP: Light with bowl-shaped metal reflector.

SCRIPT: In the TV show both the actors' lines and the entire continuity are known as the script.

SEGUE: A musical term applying to direct blend from end of one number to start of next.

SET: The scenery of a TV show such as a drawing room set.

SIG: Signature, a visual symbol or musical theme associated with advertising, station, program, or product.

SINGLE SHOT: One shot, a shot of one person.

SIXTEEN MILLIMETER (16MM.): The most generally used substandard motion picture film size.

SLIDE: A still picture or title for direct projection into film studio cameras. Usually on transparent film mounted in a two-inch by two-inch frame.

SOF: Sound is on the film.

SOUND EFFECTS: Various devices or recordings used to produce life-like sound imitations.

SPLIT SCREEN: A special effect utilizing two or more cameras so that two or more scenes are visible on the screen at the same time.

SPOT: A short announcement usually under one minute.

SPOTLIGHT (Spot): An electric lamp designed to produce a brilliant light in a restricted area.

STAGING PLAN: Arrangement of a stage set or settings expressed in scale by diagram showing position and angle of walls, entrances, etc. Often called "floor plan".

STAND-BY: Ready to go on the air. Also used for a union man who is hired to stay in the studio while a non-union man is performing.

STATION BREAK: The pause in regular programming to give local identification of a station—on the hour, half-hour, or quarter-hour.

STILL: A photograph or similar illustrative material used for pickup and insertion in program.

STRETCH: A direction to actors or sound man to slow up the tempo to fill time.

STRIKE: To remove furniture, sets, or props from a scene at a designated cue or time.

SUPER: A superimposition of one picture over another by electronic means.

SUSTAINING: A program or series of programs that is paid for by the station instead of a commercial sponsor.

SWITCH: To switch from one camera to another, from one studio to another, or from one source to another. Often called "take".

SWITCHER: The person who mechanically selects camera shots as called for by direction.

SYNC: Synchronization of action and lip movement with voice and sound. Also, the pulses which lock the scanning beam in the camera pickup tube with that in the receiver.

TAG: The finish of a musical number, sketch, or comedy routine.

TALENT: Collective name for all performers.

TALK BACK: Loudspeaker circuit from director to the studio.

TALLY LIGHT: Red light on front of camera to indicate whether that camera is on the air.

TEASER: A program opening designed to interest listeners before title cards or theme are used.

TELEPROMPTER: Mechanical prompting device.

TEST PATTERN: A schematic design containing an arrangement of geometric lines, circles, or other figures used for testing sets or aligning cameras electronically.

THEME: The music that identifies the program.

TIE-IN: The announcement that connects the program with the commercial.

TILT: Move camera in a vertical plane.

TITLE: Graphic material inserted in a program such as program titles, credits, addresses, etc.

TRAFFIC: Scheduling of programs and commercials.

TRANSCRIPTION: A disc recording of sound, voice, or music.

TRANSITION: (See BRIDGE.)

TRANSMITTER: The tower or other apparatus from which broadcasts are actually thrown into the air.

TRIPOD: Camera mount.

TRUCK: Camera moving parallel to a scene or backdrop, as contrasted with dolly which is movement toward or from set.

TURN TABLE: A device for playing phonograph records and transcriptions.

TURRET: Device on front of the camera for changing lenses.

TWO SHOT: A shot of two people.

VIDICON: Less sensitive TV cameras.

VIEW FINDER: Small monitor for cameraman built into camera which reproduces picture picked by camera.

VISUALS: Charts, pictures, etc., used in front of camera.

VTR: Video tape recording.

V.U. METER (Volume Units): The instrument which registers sound volume in decibels.

WAVE LENGTH: The distance between two waves from the top of one to the top of the other nearest it.

WIDE-ANGLE SHOT (wide shot, cover shot, long shot): A camera shot taking in a large part of the field of action.

WIPE: An exposure or erasure of a picture by black area or by another picture.

WOW: A disagreeable distortion in sound tracks.

XCU: Extreme close-up.

ZOOM: A lens action. A fast and smooth push into or pull out from a subject usually with a zoomar lens.

ZOOMAR LENS: A lens of variable focal length.

APPENDIX B

CARRIER CURRENT

For those high schools whose budget would not allow a regular broadcasting facility, such as FM, a carrier current system of broadcasting might be a very satisfactory substitute. It consists primarily of a small transmitter (2 to 5 watts) which feeds into the 110 volt wiring system of a building. The wiring then acts as a transmitting antenna, and the signal can be received anywhere within the building or close beside it. Sometimes such a transmitter is used in conjunction with a closed circuit system when outlying buildings are involved; this setup is sometimes referred to as a "wired-wireless" station.

The carrier current system is used in many colleges and some high schools. The principal disadvantage of the setup is that it cannot be received anywhere outside the area served by an electrical transformer. However, there are some distinct advantages:

1. The cost of the transmitter is low, somewhere between $35 and $1000, depending on the technical talent available.
2. Because of its limited signal, it does not require any licensing by the FCC.
3. It can serve as a public address system for a building.
4. It can be operated commercially, if desired, since no license is involved. Many carrier current stations pay their own way; some actually make a profit.

Many existing FM stations began as carrier current systems and switched to FM as a matter of routine expansion. Most of the potential values of broadcasting are served by carrier current; the fact that it is a limited operation does not militate against its being a quality operation.

APPENDIX C

RADIO AND TV HAND SIGNALS

STAND BY TO BEGIN: Point up toward ceiling; arms are extended full length.

CUE TO START LINE, SOUND, OR MUSIC: Point at actor, talent, sound man, or musician.

INCREASE VOLUME: Move hands up, palms up, to desired level.

DECREASE VOLUME: Move hand down, palm down, to desired level.

INCREASE PACE, SPEED UP: Turn index finger in circles, clockwise.

STRETCH OR SLOW DOWN PACE: Draw hands apart as in a taffy pull, or stretch an invisible rubber band.

ONE MINUTE TO GO: Raise index finger.

HALF MINUTE TO GO: "Cut" index finger to left hand in half or bend index finger in half.

ALL IS WELL OR "OK": Make "O" with thumb and index finger.

GET ON THE BEAM: Hold one hand at right angles to the palm of the other.

COME CLOSER TO THE MIKE: With palm toward face, wave fingers forward.

ON THE NOSE, ON THE HEAD, RIGHT ON TIME: Floor manager or director points to his nose.

CHEAT ON THE CAMERAMAN; YOU ARE ON THAT CAMERA:
Move finger and hand through side arc and point to desired camera.

WATCH DIRECTOR: Point to eyes.

IS PROGRAM ON TIME?: Actor points to his nose and looks at the floor manager or director.

WRAP-UP: Show performer clenched fist.

CUT OR SILENCE: Slash own throat with index finger.

MOVE FURTHER AWAY FROM MIKE: With palm turned away from face, wave hand.

TAKE A LEVEL: From elbow, swing arm and straight hand across body.

PLAY THEME: Use index fingers to form a capital "T".

FADE IN: Oblique motion upward with arm and hand, palm up.

FADE OUT: Oblique motion downward with arm and hand, palm down.

STATION BREAK: Raise clenched fists to bring down sharply.

SMILE, PEP IT UP: Use fingers to force smile to lips.

TO MOVE ACTOR NEARER CAMERA: Pull hand toward self.

TO MOVE ACTOR AWAY FROM CAMERA: Push hand away from self.

GET CLOSER: Move hands together, palm to palm.

SEPARATE, MOVE APART: Move hands apart, back to back.

PLAY TO THE LIGHT INDICATED: (When actors are in shadow) Point to area of face shadowed and to light source.

TURN AROUND: Point index finger up and circle in direction talent is to turn.

YOU ARE CLEARED (You are off camera now and can move or stop action): Full swing of the arm from shoulder to front of waist.

APPENDIX D

LOW POWER FM

Occasionally throughout this Guide, mention has been made of low power FM radio. For those teachers who might be interested in actual operation of an FM radio station within the school, the following information is offered.

In 1948, the Federal Communications Commission authorized a special category of educational radio broadcasting, ten-watt FM. The purpose of this move was to encourage the use of non-commercial radio by schools, universities, churches, and other non-profit organizations. Low power FM offered the following advantages:

1. Low cost of construction and operation.
2. Lenient licensing requirements.
3. Freedom to sign on and off at will.
4. Capability of being used for in-school instruction.

Low power FM offers innumerable opportunities for school systems to enhance their educational offerings, provide a convenient *instructional aid* for classroom teachers by the broadcasting of programs for in-school listening, render *community service* by furnishing serious educational and cultural programs, act as a *training ground* for students in the broad field of radio, stimulate good *public relations* by giving citizens an auditory glimpse of their schools, and allow their students to engage in a fascinating extra-curricular activity.

Probably a lack of information has been chieffly responsible for the slow start of FM in secondary schools. Actually, there is an increasing number of sources of information on the subject, including:

1. The Federal Communications Commission, Washington, D.C.
2. The National Association of Educational Broadcasters, Washington, D.C.
3. The FCC Field Office, Federal Building, Detroit.
4. Superintendent of Documents, Washington, D.C.
5. Speech communication departments of any of the state universities.

Initial inquiry should be made of the Washington FCC office. Rules for radio broadcasting are available from the Superintendent of Documents. Ask for Volume Three, *FCC Rules and Regulations*. The cost is $4.50.

APPENDIX E

THE NAB CODE

The Code of the National Association of Broadcasters was adopted on July 11, 1939, at the 17th Annual Convention of the NAB.

The American people granted radio franchises to the broadcasters, to be administered "in the public interest, convenience, and necessity". In order that radio may discharge its obligation to the American people as completely as possible, it seems essential that there be a code of ethical conduct for the industry, reflecting the accumulated experience of broadcasters and having as its object the promotion of maximum public service.

Examples of provisions covered by the Code:

1. Supervision is to be exercised in the selection and control of the material, characterization, and plot of programs designed for children.
2. Stations and networks should provide time for presenting public questions of a controversial nature.
3. Continuous efforts should be made to improve the application of radio as an educational adjunct.
4. An objective presentation of news should be made available to the listener.
5. Broadcasting should be used to promote harmony and understanding among religious groups.
6. Resolutions have been accepted by the NAB specifying what types of advertising can and cannot be accepted as in good taste.

APPENDIX F

PREPARING A PROGRAM FOR AIRING

The role of the teacher in preparing a program for either a commercial or an educational broadcasting station:

I. It must be remembered that the station is lending its facilities and its audience. Both should be intact after the show.

II. Obtain exact instructions from the station and follow them to the letter while preparing the programs at school:

A. Rehearse students "on mike". (Use a dummy if necessary.)

B. Teach members of the cast to keep their eyes on the director at all times.

C. Time program exactly. If 14'30" is the scheduled time, make sure the script is exactly 14'30".

D. If school is to supply records, make sure they are in excellent condition. If possible, get new ones to take to the station. If unable to obtain new ones, ask the station engineer to check the old ones well in advance of the show. (Engineers do not like to broadcast scratched or distorted records whether of music or sound.)

E. Try to have understudies for important roles. The illness of a lead on broadcast day can be disastrous to an amateur cast.

III. The teacher can help the station television director by observing the following additional recommendations:

A. Ascertain the space, program time, rehearsal time, and facilities available.

B. Ascertain what props or graphics the school should provide. (Make sure all colors are suitable for TV. Avoid contrasts that are extreme.)

C. Conduct dry-run rehearsals at school in approximately the area to be used at the station.

D. Prepare students either to play to cameras or to disregard them, depending upon the station director's instructions.

E. Be prompt in arriving at the station, bringing all promised materials.

F. Assist director during rehearsal. Taking notes is helpful.

G. Maintain discipline over the cast during rehearsal and standby time.

H. Help with the clean-up after the show.
I. Write a note of thanks to the station manager.

APPENDIX G

PROGRAM SOURCES

BRITISH BROADCASTING CORPORATION, 630 Fifth Avenue, New York, New York 10020.

BRITISH INFORMATION SERVICE, 45 Rockefeller Plaza, New York, New York 10020.

CANADIAN BROADCASTING CORPORATION, Box 6000, Montreal, Canada.

THE FRENCH BROADCASTING SYSTEM, 1290 Avenue of the Americas, New York, New York 10019.

THE NETHERLANDS INFORMATION SERVICE, 711 Third Avenue, New York, New York 10017.

OVERSEAS SERVICE OF BELGIAN RADIO AND TV, Direction des Emissions Mondiales, Radiodiffusion Television Belge 18, Place Flagey, Brussels 5, Belgium.

SOUTH AFRICAN BROADCASTING CORPORATION, P. O. Box 8606, Johannesburg, South Africa.

THE UNITED STATES NAVY, Recruiting Aids Facility, The Fallaway at Monument Street, Baltimore, Maryland.

WASHINGTON REPORT (AFL-CIO), 815 16th St., Washington. D.C.

MICHIGAN EDUCATION ASSOCIATION, East Lansing, Michigan (or any state chapter of the National Education Association).

NATIONAL EDUCATION ASSOCIATION, Washington, D.C.

NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS (NAEB), Gregory Hall, Urbana, Illinois.

CONSERVATION DEPARTMENT (any state).

UNITED NATIONS, New York City.

SCHOOL AND UNIVERSITY RADIO STATIONS.

APPENDIX H

RUNNING TIMES AND FILM LENGTHS

Film Format		Super 8 (72 Frames per Foot)			
Projection Speed in Frames per Second		18		24	
Running Time and Film Length	Seconds	Feet	+ Frames	Feet	+ Frames
	1	0	18	0	24
	2	0	36	0	48
	3	0	54	1	0
	4	1	0	1	24
	5	1	18	1	48
	6	1	36	2	0
	7	1	54	2	24
	8	2	0	2	48
	9	2	18	3	0
	10	2	36	3	24
	20	5	0	6	48
	30	7	36	10	0
	40	10	0	13	24
	50	12	36	16	48
	Minutes				
	1	15	0	20	0
	2	30	0	40	0
	3	45	0	60	0
	4	60	0	80	0
	5	75	0	100	0
	6	90	0	120	0
	7	105	0	140	0
	8	120	0	160	0
	9	135	0	180	0
	10	150	0	200	0

Film Format	16mm (40 Frames per Foot)			
Projection Speed in Frames per Second	18		24	
Running Time and Film Length	Seconds	Feet + Frames		Feet + Frames
	1	0	18	0 24
	2	0	36	1 8
	3	1	14	1 32
	4	1	32	2 16
	5	2	10	3 0
	6	2	28	3 24
	7	3	6	4 8
	8	3	24	4 32
	9	4	2	5 16
	10	4	20	6 0
	20	9	0	12 0
	30	13	20	18 0
	40	18	0	24 0
	50	22	20	30 0
	Minutes			
	1	27	0	36 0
	2	54	0	72 0
	3	81	0	108 0
	4	108	0	144 0
	5	135	0	180 0
	6	162	0	216 0
	7	189	0	252 0
	8	216	0	288 0
	9	243	0	324 0
	10	270	0	360 0

TYPICAL RUNNING TIMES

Film Format	Super 8			
Projection Speed in Frames per Second	18		24	
Inches per Second	3.0		4.0	
Film Length and Screen Time	Feet	Minutes Seconds		Minutes Second
	50	3	20	2 30
	100	6	40	5 0
	150	10	0	7 30
	200	13	20	10 0
		16 mm		
	50	1	51	1 2[illegible]
	100	3	42	2 4[illegible]
	150	5	33	4 1
	200	7	24	5 3